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The disappearing dollar

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Politics this week

Dec 2nd 2004
From The Economist print edition

Global security

Reuters

Kofi Annan, the UN secretary-general, said the report of a high-level panel on global threats and security, published on December 1st, represents a "unique opportunity to refashion and renew" the battered world body. He will move quickly to implement those recommendations within his purview. But others, including a proposed expansion of the Security Council, will require a two-thirds vote by the General Assembly and no veto by the "permanent five". Not easy.

See article

Marwan Barghouti, a popular Palestinian militia boss currently serving five life terms in an Israeli jail for his role in attacks on Israeli soldiers and civilians, announced that he would stand for the presidency of the Palestinian Authority after all.

See article

Israel's prime minister, **Ariel Sharon**, who has made it clear he will not free Mr Barghouti, lost a crucial budget vote. His coalition might now collapse, endangering his plan to pull out of Gaza, though he said he would seek a coalition with the Labour Party to save both.

The 35-nation board of the International Atomic Energy Agency, the UN's nuclear guardian, again resolved not to report **Iran's** nuclear transgressions to the UN Security Council, in return for a full suspension of its uranium-enrichment work and in the hope that negotiations with Britain, France and Germany that are due to start on December 15th would end the country's dabbling with dangerous nuclear technologies. Iran said it would never give up its right to these technologies, and has been blocking access by inspectors to two military sites.

See article

Congo announced that Rwanda had invaded its eastern border areas. Rwanda refused to confirm or deny it, but said that if it did send troops into its huge, chaotic neighbour, it would only be to hunt down genocidal Rwandan rebels hiding there. A UN patrol saw what it thought were Rwandan troops on the wrong side of the border.

See article

South Africa's president, Thabo Mbeki, accused **Archbishop Desmond Tutu** of being an ignorant liar, after the Nobel peace laureate complained that Mr Mbeki's policy of "black economic empowerment" was benefiting only a few tycoons with political connections.

Damaging deadlock

EPA

Ukraine's tense stand-off between supporters of two rival presidential candidates, Victor Yushchenko and Victor Yanukovich, continued. A fresh election looked increasingly likely after the parliament dismissed the government, in which Mr Yanukovich serves as prime minister. The supreme court is also hearing claims of fraud in the election.

See article

Romania's elections were also marred by claims of fraud. The ruling Socialist Party was in the lead, but the presidential poll will now go to a run-off later this month.

See article

Also heading for an early election is **Portugal**, after President Jorge Sampaio said he had lost confidence in the government of Pedro Santana Lopes. Political turmoil was triggered when Mr Santana Lopes's predecessor, José Manuel Barroso, left to become president of the European Commission in Brussels.

The **European Union** formally took over NATO's peacekeeping mission in Bosnia. This is the EU's biggest-ever military operation.

Nicolas Sarkozy staged a grand party to mark his inauguration as president of France's ruling UMP party. His successor as finance minister is to be Hervé Gaymard.

A French appeal court reduced the ban on **Alain Juppé's** holding of elective office from ten years to one. Mr Juppé, a former prime minister, was convicted in January of political corruption.

Another term

Colombia's Congress passed constitutional changes allowing Álvaro Uribe to run for a second term, a move that will allow the popular president to continue his tough campaign against the country's armed groups. They now await court approval.

See article

Chile's president, Ricardo Lagos, unveiled a report that blames the armed forces for the torture of political prisoners during Augusto Pinochet's rule. He also announced compensation for victims.

See article

George Bush made his first-ever official visit to **Canada**.

See article

Mexico's president, Vicente Fox, returned the draft budget for 2005 to Congress with over 60 complaints attached, effectively vetoing it. If a budget is not passed by December 31st, the government may cease to function.

Cuba freed five dissidents from a group of 75 convicted in April last year.

Cabinet moves

Tom Ridge, the head of America's homeland security department, resigned. Meanwhile, President Bush nominated Carlos Gutierrez, currently the boss of Kellogg, a cereal-maker, to be his secretary of commerce, replacing Don Evans.

The Pentagon announced it would increase the number of **American troops** in Iraq to 150,000—the largest force since the invasion.

The **Supreme Court** refused to hear a suit brought by conservative groups hoping to overturn Massachusetts's gay-marriage law, but heard a case on medical marijuana.

Containment contd

Aung San Suu Kyi, leader of Myanmar's opposition party, is to be held under house arrest for a further year. The Association of South-East Asian Nations, which includes Myanmar, was holding a summit at the time and declined to comment.

See article

Wen Jiabao and Junichiro Koizumi, the prime ministers respectively of **China** and **Japan**, met in Vientiane, Laos, where they were attending the ASEAN summit as observers. Mr Wen declined to accept an invitation to visit Japan in the near future, a sign that frosty relations between the two countries have yet to thaw.

A bill allowing President Pervez Musharraf to stay on as army chief as well as president of **Pakistan** was signed into law.

An explosion killed 166 **coalminers** deep underground in central China.

Reuters

See article

The government of **Bangladesh** stopped four women from taking part in a swimming competition after pressure from an Islamic group.

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Business this week

Dec 2nd 2004
From The Economist print edition

A new low

The **dollar** reached another new low against the **euro**, of $1.33, after Jean-Claude Trichet, president of the European Central Bank, indicated that the bank would not seek to stop the dollar's fall. The currency also fell to a five-year low against the yen.

See article

The price of **gold** has soared to a 16-year high, with February futures rising to $455.80 per ounce. The bullion bulls have been compelled by the slide in the dollar and the high price of oil.

See article

America's economy grew by 3.9% at an annual rate in the third quarter, an upward revision from the 3.7% previously estimated. Consumer spending and business investment were the main drivers. Consumer confidence, however, dropped in November for the fourth straight month, according to the Conference Board.

Trade troubles

The Singapore arm of **China Aviation Oil**, a Chinese state-controlled company listed on the Singapore Exchange, has lost $550m from trading oil derivatives in the past five weeks. Bail-out talks are under way, and the exchange has asked PricewaterhouseCoopers, a big accounting firm, to find out what went wrong.

During a summit in Laos, the **Association of South-East Asian Nations** signed a pact with China to cut tariffs on a number of goods by 2010. ASEAN also aims to start trade talks with Japan in April. Six leading ASEAN countries, including Singapore and Malaysia, agreed to drop tariffs on electronics and ten other areas by 2007.

See article

After 20 years of delay, the EU's Council of Ministers approved a directive that is supposed to make it easier for European companies to **merge across borders**. The watered-down version acceded to Germany's demands that its workers retain the right to be represented on the boards of merged companies. The directive now goes before the European Parliament, which can approve it or send it back for more work.

See article

Merger talks between **Dexia**, a Franco-Belgian bank, and Italy's **Sanpaolo IMI** were scuttled after shareholders in both companies, as well as Belgian politicians, reportedly baulked. Cross-border mergers remain a rarity in European banking.

Boring into Yukos

Gazprom, Russia's state-run gas monopoly, has decided to bid for the Yuganskneftegaz unit of **Yukos**, a

troubled oil giant, in an auction scheduled for December 19th. Yugansk accounts for a majority of production at Yukos, long the target of the Kremlin's wrath. Its sale is expected to fetch at least $8.75 billion, which will help allay Yukos's $25 billion back-taxes bill. Yukos's head, Steven Theede, said he still hopes to stop the company from breaking up—though he might have to leave New York and return to Russia first.

The price of **oil** plunged by 7.3%, to $45.49 a barrel on December 1st, as concerns eased about America's supplies of heating fuel. The drop was the biggest in three years.

See article

America's two biggest **carmakers** lost speed, as General Motors reported a 17% drop in car sales in the year to November, and Ford also posted a big fall. Nissan, DaimlerChrysler and Toyota saw their sales grow in America.

The president of **CalPERS**, America's largest public pension fund, was voted off the board of directors. Sean Harrigan is a former union official who has championed CalPERS's activism on executive pay and other matters. Mr Harrigan blamed political interference for his fall; his critics think CalPERS's campaigns to improve corporate governance have become too diffuse.

See article

Merck plans big severance packages for more than 200 executives if the firm is taken over, according to a filing with the Securities and Exchange Commission. The drugmaker has been under pressure since it withdrew Vioxx, a painkiller, in September owing to concerns about side effects. The compensation move is seen as a bid to keep the firm's top ranks intact while it sorts itself out.

Four big-name Hollywood studios came out in support of the next-generation DVD format sponsored by **Toshiba**. This is a blow to Sony, which has been peddling an alternative technology known as Blu-ray. Next-generation DVDs, with sharper images and improved anti-piracy protection, are likely to proliferate in a few years.

See audio interview

Retail blues

Shares in **Wal-Mart** fell 4% on November 29th after the retail giant cut its sales forecast for that month to 0.7% year-on-year, down from the 2-4% previously estimated. The lower figures include the day after Thanksgiving, which is traditionally America's biggest shopping day. The retailer plans to cut its prices to lure consumers back.

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World economy

The disappearing dollar

Dec 2nd 2004
From The Economist print edition

How long can it remain the world's most important reserve currency?

Get article background

THE dollar has been the leading international currency for as long as most people can remember. But its dominant role can no longer be taken for granted. If America keeps on spending and borrowing at its present pace, the dollar will eventually lose its mighty status in international finance. And that would hurt: the privilege of being able to print the world's reserve currency, a privilege which is now at risk, allows America to borrow cheaply, and thus to spend much more than it earns, on far better terms than are available to others. Imagine you could write cheques that were accepted as payment but never cashed. That is what it amounts to. If you had been granted that ability, you might take care to hang on to it. America is taking no such care, and may come to regret it.

The cost of neglect

The dollar is not what it used to be. Over the past three years it has fallen by 35% against the euro and by 24% against the yen. But its latest slide is merely a symptom of a worse malaise: the global financial system is under great strain. America has habits that are inappropriate, to say the least, for the guardian of the world's main reserve currency: rampant government borrowing, furious consumer spending and a current-account deficit big enough to have bankrupted any other country some time ago. This makes a dollar devaluation inevitable, not least because it becomes a seemingly attractive option for the leaders of a heavily indebted America. Policymakers now seem to be talking the dollar down. Yet this is a dangerous game. Why would anybody want to invest in a currency that will almost certainly depreciate?

A second disturbing feature of the global financial system is that it has become a giant money press as America's easy-money policy has spilled beyond its borders. Total global liquidity is growing faster in real terms than ever before. Emerging economies that try to fix their currencies against the dollar, notably in Asia, have been forced to amplify the Fed's super-loose monetary policy: when central banks buy dollars to hold down their currencies, they print local money to do so. This gush of global liquidity has not pushed up inflation. Instead it has flowed into share prices and houses around the world, inflating a series of asset-price bubbles.

America's current-account deficit is at the heart of these global concerns. The OECD's latest *Economic Outlook* predicts that the deficit will rise to $825 billion by 2006 (6.4% of America's GDP) assuming unchanged exchange rates. Optimists argue that foreigners will keep financing the deficit because American assets offer high returns and a haven from risk. In fact, private investors have already turned away from dollar assets: the returns on investments in America have recently been lower than in Europe or Japan (see article). And can a currency that has been sliding against the world's next two biggest currencies for 30 years be regarded as “safe”?

In a free market, without the massive support of Asian central banks, the dollar would be far weaker. In any case, such support has its limits, and the dollar now seems likely to fall further. How harmful will the economic consequences be? Will it really undermine the dollar's reserve-currency status?

Periods of dollar decline have often been unhappy for the world economy. The breakdown of Bretton Woods that led to a weaker dollar in the early 1970s was painful for all, contributing to rising inflation and recession. In the late 1980s, the falling dollar had few ill-effects on America's economy, but it played a big role in inflating a bubble in Japan by forcing Japanese authorities to slash interest rates.

This time round, it is a bad sign that everybody is trying to point the finger of blame at somebody else. America says its external deficit is mainly due to sluggish growth in Europe and Japan, and to the fact that China is pegging its exchange rate too low. Europe, alarmed at the “brutal” rise in the euro, says that America's high public borrowing and low household saving are the real culprits.

There is something to both these claims. China and other Asian economies should indeed let their currencies rise, relieving pressure on the euro. It is also true that Asia is partly to blame for America's consumer binge: its central banks' large purchases of Treasury bonds have depressed bond yields, encouraging households in the United States to take out bigger mortgages and spend the cash. And Europe needs to accept, as it is unwilling to, that a weaker dollar will be a good thing if it helps to shrink America's deficit and curb the risk of a future crisis. At the same time, Europe is also right: most of the blame for America's deficit lies at home. America needs to cut its budget deficit. It is not a question of either do this or do that: a cheaper dollar and higher American saving are *both* needed if a crunch is to be avoided.

Simple but harsh

Many American policymakers talk as though it is better to rely entirely on a falling dollar to solve, somehow, all their problems. Conceivably, it could happen—but such a one-sided remedy would most likely be far more painful than they imagine. America's challenge is not just to reduce its current-account deficit to a level which foreigners are happy to finance by buying more dollar assets, but also to persuade existing foreign creditors to hang on to their vast stock of dollar assets, estimated at almost $11 trillion. A fall in the dollar sufficient to close the current-account deficit might destroy its safe-haven status. If the dollar falls by another 30%, as some predict, it would amount to the biggest default in history: not a conventional default on debt service, but default by stealth, wiping trillions off the value of foreigners' dollar assets.

The dollar's loss of reserve-currency status would lead America's creditors to start cashing those cheques—and what an awful lot of cheques there are to cash. As that process gathered pace, the dollar could tumble further and further. American bond yields (long-term interest rates) would soar, quite likely causing a deep recession. Americans who favour a weak dollar should be careful what they wish for. Cutting the budget deficit looks cheap at the price.

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About sponsorship

Nepal

A failing state

Dec 2nd 2004
From The Economist print edition

The Himalayan kingdom is a gathering menace

AP

Get article background

LIKE a severely disturbed individual, a failed state is a danger not just to itself but to those around it and beyond. That was a lesson indelibly learned on September 11th 2001. After 20 years of war, Afghanistan had become such a state, no longer functioning in any conventional sense. Unable to offer its own citizens anything other than poverty and fear, it was also unable to prevent itself from being hijacked by drug barons, war lords and jihadists of every stripe, from those who merely hoped to establish a new caliphate in central Asia to those whose target was the heart of the world's most powerful nation. From a failed state, to borrow from Yeats, mere anarchy is loosed upon the world, less through deliberate design than through negligence. But there is also a second danger. Neighbours, like nature, abhor a vacuum, and are tempted to rush in. However high-minded their motives, they can trigger competition and conflict; from the Balkans in 1914 to central Africa now, there is no scarcity of depressing examples. Which is why the eyes of the world ought to be focused more clearly on Nepal.

The country in no way resembles its seductive image as a hashish-tinged Shangri-La of pagodas and Himalayan treks. In fact, after nine years of a vicious civil war that has seen at least 10,000 people killed, the government has abandoned much of its territory to Maoist guerrillas. Its own soldiers commit human-rights violations on a horrific scale. A despotic monarch treats his own elected politicians with contempt. As we report (see article), there is no chance that the government can defeat the rebels; there is, however, a small but growing possibility that the rebels could defeat the government.

If this were purely an internal matter, the world could afford to look shamefacedly away. But it isn't. Nepal's Maoists have formed links with India's own Maoist insurgents, who go by the local name of Naxalites, and, says India, with some of the vicious groups fighting secessionist wars in its north-east. As the Nepali Maoists have advanced, so have the Naxalites. They now pose a serious security threat in half a dozen of India's states, including three of the largest. There are indications that they menace Bangladesh, too. Were the Maoists to triumph in Katmandu, the Naxalites would surely be greatly emboldened. There is no danger to the survival or the integrity of India, but its desperately poor states like Bihar have little chance of progressing with a civil war raging on their soil. There is also the possibility, which cannot be discounted, that India will be tempted to intervene in Nepal. That would cause intense disquiet in China, Nepal's other big neighbour.

Think preventively

Nepal might seem too remote a place for anything much to be done. But there are a few possibilities. India and America, the Nepalese government's main supporters, urgently need to tell it that its brutal methods, far from defeating the Maoists, are increasing support for them. The deep division between the king and the political parties means that this is a three-way fight, not just a two-way one. The king needs to be induced to return the country to proper constitutional monarchy. UN mediation has not been attempted, but should be. India is wary, for a bad reason: fear of setting a precedent for Kashmir. Yet in the end, a peacekeeping operation may well be needed. It would be wise to start thinking about one now, rather than waiting for Nepal's complete collapse.

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Ukraine's election

Russian roulette

Dec 2nd 2004
From The Economist print edition

A genuinely democratic Ukraine would be a splendid example to others—including Russia

Get article background

WEEK two in Ukraine's democratic revolution, and the protests in the streets of Kiev have grown. So has confusion over what happens next—and over the likely eventual outcome. But amid a welter of court hearings, parliamentary votes of no confidence, blockades of public buildings and (occasionally fraught) negotiations between the two camps in the disputed presidential run-off election that was held on November 21st, three things have become clearer.

The first is that most of those involved remain, thankfully, committed to eschewing violence and seeking a peaceful solution. The second is that it is highly unlikely that the purported winner of the fraudulent poll, Victor Yanukovich, the prime minister whose government lost a no-confidence vote this week, will ever be president. Instead, a compromise is likely to be struck between Victor Yushchenko, the opposition candidate, and Leonid Kuchma, the incumbent president and backer of Mr Yanukovich. That may lead to a fresh election, perhaps with different candidates (see article).

The third thing to become clearer is that what happens now in Ukraine will crucially affect not just its own future, but that of all countries of the former Soviet Union—most notably Russia itself. The crisis in Ukraine may have been triggered by the blatant election fraud, most glaringly carried out in the country's eastern regions of Donetsk and Luhansk by supporters of Mr Yanukovich and Mr Kuchma. But its origins are in good measure of Russia's making.

The truth is that many Russians were never happy with the very notion of Ukrainian independence. Russians often look at Ukraine as Englishmen see Scotland: as a natural part of their domains. Eastern Ukraine, Russian-speaking and Mr Yanukovich's base, was the heart of the Soviet Union's coal and steel industries. Modern Russia grew out of Kiev's Rus. The Crimea was part of Russia until as recently as 1954, when Khrushchev capriciously transferred it to Ukraine. It is no surprise that not only members of Vladimir Putin's government in Moscow, but even many ordinary Russians, are angry over what is widely portrayed as the West's “interference” in their own backyard—and over the risk of “losing Ukraine”.

In fact Mr Putin has made a disastrous mistake in Ukraine, first by openly campaigning for Mr Yanukovich, and second by seeking to push him into the presidency even after the scale of the electoral fraud became obvious. The Russians could have worked quite happily with Mr Yushchenko, who was friendly towards them when he was prime minister in 1999-2001. The risk for them now is that either he or one of his close allies will emerge as a president who is far more hostile to Russia's interests and more openly committed to early entry into such western clubs as NATO and the European Union.

Mr Putin is right to see such an outcome as a threat, but not because it is one somehow aimed at Russia. In fact, Russia's interests are not well-served by fostering puppet dictators in its near-abroad. They seldom prove malleable to the Kremlin—consider Alexander Lukashenka in Belarus. And if and when they are overthrown by democratic protests, their successors are more likely to pursue anti-Russian policies—look at Mikhail Saakashvili in Georgia. But more broadly, the real reason why the emergence of true democracy in Ukraine is a threat to Mr Putin is that it will set an alluring example to would-be democrats in Russia as well. A successful, western-oriented Ukraine under a democratic government would give heart to Russia's liberals, who have been bitterly disappointed by Mr Putin's increasingly authoritarian and illiberal rule.

The risk of secession

Could Mr Putin still stop such a threat emerging? His misguided backing of Mr Yanukovich was designed to that end. But now that it has backfired, another possibility looms: that Ukraine might split apart. The presidential election confirmed that there is a divide between a Russian-speaking south and east that looks naturally to Moscow for leadership, and a Ukrainian-speaking north and west that looks to Warsaw and even Brussels. This week's threat by a few eastern regions to hold referendums on independence if Mr Yushchenko becomes president has been postponed. But Ukraine's borders are messy and fragile, and the risk of part of the country going its own way, or even of joining Russia, remains.

If an ethnically homogenous part of a country wishes to secede, should it not be allowed to do so? Yes, in principle. But it is seldom a wise response to the loss of an election (remember the American South in 1860). A split in Ukraine now would be unlikely to be peaceful, any more than was the break-up of Yugoslavia in the 1990s, not least because there could be bitter fights over Kiev. It would be better for all if the country held together, under a genuinely democratic government.

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European reform

Business as usual

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The European Union has missed another opportunity to make its economy more competitive

Get article background

ONLY four years ago at a summit meeting in Lisbon, the leaders of the European Union unveiled with all the flourish they could muster the grand goal of becoming the world's most competitive and dynamic knowledge-based economy by the end of this decade. Their declaration was supposed to herald wide-ranging reforms, whose centrepiece was supposed to be improving the rules that govern business. The idea was not just to create a deeper single market, but also to boost the EU's sluggish growth and cut its high unemployment. Last week, one of the most important reforms was finally agreed to by the EU's 25 member countries—a directive setting out a single set of rules for mergers of companies across national borders. This initiative has finally come to fruition after fully 20 years of discussion and debate (see article). Despite that investment of time and effort, and despite the ambitious goals set at Lisbon, the resulting directive is a hopeless failure.

Creating common rules for cross-border mergers may seem like mundane stuff, yet it is the kind of reform that is crucial for Europe's economy. At present, the EU's merger rules are a hotch-potch of national laws. In many countries there is no clear legal way to combine one firm with another in a different EU country. Instead, firms use costly legal contortions to do this, which puts smaller firms at a big disadvantage. This, in turn, helps to explain why mergers remain far less common than in America.

So the fact that the EU has at last agreed to some sort of common rules might seem like progress, albeit of a painfully slow sort. But in the negotiations Germany has succeeded in watering down the rules to such an extent that they may have little effect. It has been at pains to preserve its system of *Mitbestimmung*, or "co-determination", in which workers are represented on company boards and participate in decision-making. No other EU country gives as much of a decision-making role to workers. In the decades after the second world war, co-determination gave German business peaceful labour relations, much envied elsewhere. But today's global competition has made it an anachronism, and an obstacle to Germany's own sorely needed restructuring.

Instead of reducing co-determination's role within Germany, the new EU merger rules might well export it to other countries, or kill off most prospects of cross-border restructuring, at least with German firms. At Germany's insistence, the new merger rules say that, if a third or more employees in a newly merged firm are covered by strong worker-participation rights, those rights will apply to the entire firm. In practice, an English or French company wanting to combine with a German firm could be forced to take

worker representatives on to its board. That provision alone may be enough to destroy the chance of many such combinations. Germany's government seems to think that, with the support of others, it is fending off a foreign assault on its economic patrimony. Such intransigence will prove a costly mistake, and not just for Germany.

Germany's rules, Europe's problem

A more vigorous market for corporate control could help to boost Europe's productivity and create more efficient firms by reallocating excess capacity, as it has done in so many other places. Too many European governments have preferred to build so-called “national champions” by hand-picking merger partners for many of their country's leading firms. Germany and France have been especially keen on such meddling, which has a miserable record of success. Meanwhile, smaller firms go begging for partners.

Just as big a worry is the precedent that the takeover directive sets for forthcoming reforms. In “harmonising” business regulation, the EU seems set on a path of imposing the most stringent rules on all countries, rather than seeking the minimum level of regulation acceptable to all, or even moving towards the average. That does not bode well for coming attempts to harmonise rules on corporate tax. High-tax Germany is likely, once again, to fight fiercely for others to follow its lead, especially since its eastern neighbours have cut tax rates to more sensible levels and experienced a boost to their economies. For the rest of Europe, choosing higher corporate taxes would be a self-inflicted wound, and a bad one. All the grand promises of Lisbon have amounted to nothing.

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British social policy

Other people's children

Dec 2nd 2004
From The Economist print edition

The idea of the state intervening in early childhood is awful, but the alternative may be worse

Alamy

FOR most people, the family is the most sacred part of private life, and therefore the bit they are keenest to keep the state away from. That is why the idea that the British government has a child-care strategy sounds so immediately repellent. Surely the state already encroaches far too far in our lives: do we really want it playing with our babies? Yet in this area it is worth curbing a natural aversion to government interventionism: child-rearing is part of the state's business.

Children are the focus of much of the British government's current hyperactivity. It has targeted its anti-poverty measures at families with children and is now extending pre-school education and state-supported child care for working parents. It is also spending heavily on Sure Start, an expensive scheme focused on helping poor children.

The government has got into the nannying business for both good and bad reasons. The first bad reason is its determination to envelop everybody in the warm embrace of a Scandinavian-style welfare system. Its child-care policies are the sharpest illustration of the plan to extend tax-funded benefits up as well as down the income scale by providing preschool education for all and also, increasingly, keeping schools open after hours to offer child care to hard-pressed parents. In the background lies the idea that by providing the well-off as well as the poor with tax-funded benefits which they will want to hang on to, Labour will make it that much harder for a future Tory government to roll back the state.

The second bad reason is to get women out to work. The government has been pushing them in that direction for years, and providing child care will give them an extra shove. The government has a clear interest in getting mothers back to work—they will boost economic growth and tax revenue—but families, not governments, should decide whether mothers trade their time with their children for cash.

The only good reason for the state to intervene in child-rearing is that the youngsters themselves may benefit. If intervention substantially improves the prospects of the children concerned—and the gain must be substantial, to override the presumption that parents make the best parents—then that is justification in itself. Moreover, in that case there would be further benefits for society at large. If children are troublesome, they make life hard for those they are taught with (see article). If they grow up criminal, they will steal the cars of those who live near them. If they grow up ill-educated, they will contribute less to the economy.

Very well, in principle

Do pre-school programmes actually work? The answer is nuanced. While high-quality, part-time pre-school education (for three- and four-year-olds) seems to help children cope with school, dumping babies in nurseries all day long before they are one is also pretty clearly bad for them. So the government needs to temper its enthusiasm for universal child care and working mothers.

And what about targeting children whose parents are too poor, too feckless or too drugged to give them a decent upbringing? Unfortunately, such schemes are not the panaceas they were once thought to be. Head Start, America's programme for pre-school education for three- and four-year-old disadvantaged children has consumed $66 billion over four decades, and nobody really knows whether it has done any good. That is why the General Accounting Office has commissioned a large-scale study to answer the question. Sure Start, the version the British government is pushing, looks more promising—it starts earlier, is more intensive and involves mothers, which evidence suggests are all important—but as it rolls out, the British government needs to pay closer attention than America's has to whether this is a good way to spend money.

Those who fear letting governments further into their family life are rightly suspicious: governments are not to be trusted. Nor, sadly, are some parents. If the state can act to improve children's prospects, and hence society's prospects too, it should. The government's child-care strategy is not wrong in principle, but ministers also have to show that it will work, and that remains to be seen.

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Letters

Dec 2nd 2004
From The Economist print edition

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Online winning

SIR – I am curious why you conclude that "the offline world has won", given that Antigua has won its online-gaming case against America at the World Trade Organisation ("House of cards", November 20th). There is nothing about the provision of services on the internet versus other methods of delivery that should affect a country's obligation to permit free trade in accordance with its WTO commitments. It is important to realise that America did not expressly exclude gambling services even though they were aware that doing so was an option that other countries were choosing to take. The "morals" argument also figured significantly in the dispute panel's proceedings, but as America has the world's largest legal gambling market—worth an estimated $73 billion in 2003—its case cannot credibly be made upon those moral issues.

Antigua offers responsible, regulated online gaming, as do a number of providers elsewhere. Antigua recognises the right of America to regulate internet gaming—but prohibition is not regulation, and a country that has made commitments to its trading partners under the WTO is charged with the responsibility to deal fairly with them in allowing market access. And that is what lies at the heart of the recent WTO decision.

Mark Mendel
Lead legal counsel for Antigua and Barbuda
Crosshaven, Ireland

Diplomacy and protection

SIR – The United Nations was set up not with "noble aspirations" but with diplomacy in mind ("Time for a re-think", November 20th). If noble aspirations had been the motivation, most countries would not have joined. Instead, the UN was set up to protect nation states from outside interference. One consequence of this is that diplomacy is put above the prevention of genocide. I hope that coalitions of the willing (such as in Kosovo) will bypass the UN more frequently and work to prevent such tragedies—saving millions of lives in the process.

Russell King
London

SIR – You fail to mention that for $1.25 billion a year—roughly what the Pentagon spends every day and a half—the UN remains an essential part of the worldwide fight against AIDS, hunger, organised crime, weapons control and disaster relief, and other less newsworthy miseries.

Denise Garcia
Cambridge, Massachusetts

Doomed policy

SIR – India seems to be taking a two-pronged approach towards Kashmir ("Sticky wicket", November 20th). Its government wants to use economic measures to win over the restive population of the region and so get the secessionist leaders to join the political mainstream eventually. At the same time India wants Pakistan to sanction the present line of control dividing Kashmir.

This policy is doomed because it ignores the true nature of the dispute, which is political rather than economic. Any serious attempt to solve the dispute will need a tripartite character, with Kashmir's leaders sharing a negotiating table with India and Pakistan on an equal footing. A solution will require both India and Pakistan to show flexibility and make compromises that have seemed undesirable and untenable in the past.

Suhail Mattoo
New York

Poles apart

SIR – Charlemagne asserts that "the Dutch, the Hungarians and the Poles have all signalled that they hope to bring their troops home [from Iraq] soon" (November 20th). This is not accurate as far as Poland is concerned. Poland does want its troops home as soon as possible but not before the task with which they have been entrusted is completed.

Zbigniew Matuszewski
Polish ambassador
London

Patent progress

SIR – You rightly note the sharp increase in patent filings ("The cost of ideas", November 13th). But the notion that the work required to examine an application is three times greater than a decade ago refers to all applications in general, not individual ones.

Also, you did not report the measures taken by patent offices around the world, notably the European Patent Office (EPO), to increase production while keeping quality high. These include reorganising operations around 14 technological groups and putting search and examination of each patent application under a single examiner. In addition, the EPO is setting up a new department to monitor the quality of its patents and processes.

Dominique Guellec
Chief economist
European Patent Office
Munich

Market-driven drugs

SIR – Surely *The Economist* should applaud the market-driven response of Afghanistan's opium producers for the successful re-establishment of their business after its near destruction under the Taliban ("After the Taliban", November 20th)? These farmers are responding intelligently to a scarcity in consumer markets. This is a direct result of the criminalisation of distribution and consumption of the drug.

Surely the solution is obvious: the main consumer nations should purchase the Afghan crop in full at a rate marginally higher than that available from illegal distributors. They should also treat heroin addiction as an illness and use the legally acquired stocks to provide free or low-cost maintenance for addicts subject to their undergoing treatment to reduce dependency. The only losers would be drug barons.

Mike Sexton
London

British bans

SIR – You opine that with the ban on foxhunting, amongst other things, it "looks as though the government has succumbed to a nasty bout of gloomier-than-thou Methodism" ("No smoking, foxhunting, sugar, salt, fat", November 20th). In fact the act contains nothing that prevents like-minded consenting adults from banding together, dressing like prats and riding horses through the countryside. The only restriction appears to be that they cannot tear small animals apart in the process.

Dan Tarzey

Oxford

SIR – As a lifelong Methodist I am disappointed to be categorised as “gloomier-than-thou”. I do not smoke, hunt foxes, drink to excess, or ignore medical advice on diet but that does not make me a killjoy. In my experience Methodists are notably far less gloomy than many of their fellow citizens.

Graham Andrew
London

SIR – I am relieved that the average number of staff fatalities for passive smoking in British pubs is only 49 a year. For the millions of smokers who cannot be bothered to go for a cigarette outside in the rain, it is a small price to pay. But I am concerned that only death qualifies one as a victim of second-hand smoke. What about those who suffer from nausea, asthma, chronic headaches, colds and influenza, back pain, angina, etc?

Max Paiano
Colchester, Essex

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The second term

Shock and awe, continued

Dec 2nd 2004 | WASHINGTON, DC
From The Economist print edition

AFP

Republican self-confidence is emerging as the biggest threat to the ambitious second-term agenda of President Bush and Speaker Hastert

> Today, I want to speak to every person who voted for my opponent: to make this nation stronger and better I will need your support, and I will work to earn it. A new term is a new opportunity to reach out to the whole nation.

IN THE month since George Bush's acceptance speech, the following things have happened. The president has replaced a third of his cabinet, tightening White House control over government departments still further. In the House of Representatives, the Republican speaker, Dennis Hastert, has pulled a bill on intelligence reform that would have passed with Democratic votes because it did not have majority support in his own party. In the Senate, Republicans have increased the power of their party leader to dole out plum jobs, and threatened to change the procedural rules that allow Democrats to filibuster judicial nominations. If this is bipartisanship, heaven help America when the Republicans play rough.

This week, Tom Ridge, the homeland-security secretary, became the seventh head of an executive department to resign. Of the four replacements nominated so far, three are policy advisers from the White House: Condoleezza Rice, the national security adviser, as secretary of state; Alberto Gonzales, the White House counsel, as attorney-general; and Margaret Spellings, a domestic-policy adviser, as education secretary. In other words, the people who made policy in the White House during the first term have fanned out across Washington to take charge of the executive departments in the second.

All this is not necessarily a sign of hubris. America, after all, has a presidential not a cabinet system of government. Having won a clear electoral victory, and having put forward a clear and expansive agenda, Mr Bush has every right to nominate people who helped formulate the policies he campaigned on—particularly if they are the best people to put those policies into practice.

The biggest test will come in how Mr Bush reshuffles his economic team. By common consent, this needs strengthening. So far, the commerce secretary and head of the National Economic Council have gone, and the treasury secretary's position looks about as solid as the dollar (one White House aide told the *Washington Post* that John Snow can stay “as long as he wants, provided it is not very long”).

With the complex issues of Social Security and tax reform high on Mr Bush's second-term agenda, the

most important requirement for the new team would seem to be a solid grounding in policy wonkery. But Mr Bush's first nomination—Carlos Gutierrez, the chairman of Kellogg, for commerce secretary—suggests the president is looking to the cornflakes executive for business acumen, rather than a detailed command of policy. This may be pardonable in a commerce secretary. But worries will mount about overconfidence if the rest of the team has the same look.

There are greater signs of Republican hubris on Capitol Hill. Before they captured the House in 1994, the Republicans had imposed upon themselves a rule: if any of their leaders were indicted, he or she would be suspended from his leadership position. Reassembling for their lame-duck session last month, the first thing the Republicans did was scrap this provision so that the majority leader, Tom DeLay, could stay on even if he were to be indicted in a Texan money-politics scandal. The fiercely partisan Mr DeLay denies any wrongdoing, but the removal of this “Caesar's wife” provision was seen by Democrats (and not a few Republicans) as arrogant and unseemly.

Still, expectations of bipartisanship in the House of Representatives were never high. The more worrying changes have come in the Senate, traditionally more resistant to party discipline.

To start with, conservatives mounted a ferocious campaign to stop Arlen Specter, a moderate Republican from Pennsylvania, from becoming chairman of the Senate Judiciary Committee (this oversees judicial nominations and will become the main forum for conflict over the Supreme Court). Mr Specter had infuriated his colleagues by saying anti-abortion judges were unlikely to be confirmed. On this occasion, Senate traditions prevailed: Mr Specter got the job based on seniority—but not before having to eat his words and kow-tow to all and sundry. He is one of the centrists whom Mr Bush will need if he is to work across party lines, so this ritual hazing hardly boded well.

The Republican senators then gave their leader, Bill Frist, an instrument for enforcing party discipline: he may now fill some vacancies on committees himself, overriding traditions of seniority. More controversially, Republicans are talking about challenging what is arguably the most important rule in the Senate—the filibuster, a delaying tactic which means that to get anything done you need 60 votes, not a simple majority of 51. The rule has been used—Republicans say abused—by Democrats to delay votes on some of Mr Bush's judicial nominees. To challenge it would be a big step towards imposing greater party discipline on the Senate.

Republican self-confidence is plainly a problem for bipartisanship, but why should Mr Bush care? After all, he promised to work across party lines in 2000 as well, but he still managed to push through most of his first-term aims despite bitter partisanship. This time, though, it could be harder for him for two reasons.

First, Mr Bush's second-term agenda is so ambitious that Democratic support may be a political necessity. For instance, Social Security touches almost everyone in America. Ramming reform of the pension system through on a party-line vote could make change vulnerable to subsequent reversal; it would also leave Republicans with no cover in the mid-term elections. The same is probably true of Mr Bush's more radical tax-reform plans.

Second, Mr Bush may need the support of Democrats because some Republicans are so confident in their larger majorities that they are willing to thumb their noses even at the White House. Consider the fate of the bill that would centralise the intelligence services, based on proposals of the September 11th commission.

This bill has Mr Bush's support (nominally at least). It would have passed the House with Democratic votes. But two senior Republicans objected to some of its provisions and persuaded a majority of their colleagues to back their stance. On November 20th, rather than see the bill pass with Democratic support, Speaker Hastert delayed the vote.

This may have been understandable. No speaker—indeed no president—wants to lobby against his own party. As Mr Hastert said last year, one of his principles as speaker is “to please the majority of the majority”. But it is still a challenge to Mr Bush. Republicans, it seems, are no longer prepared to sacrifice their own views to the overriding aim of getting their president re-elected.

On the particular issue of intelligence reform, Mr Bush might yet find a bipartisan deal. But the emerging pattern of politics it reveals looks explosive. In the White House, a more coherent administration is gearing up for an ambitious agenda. In Congress, the Republicans are already squabbling with each other and stirring up Democratic resentment. It could be a gruelling second term.

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Local government in Virginia

A walk on the Wilder side

Dec 2nd 2004 | RICHMOND
From The Economist print edition

A legendary operator returns to Richmond—and stages a power grab

AP

JUMPING from statewide elected office to city government used to be seen as a demotion. Now it is close to fashionable. Jerry Brown, California's trend-setting governor, has resurfaced as mayor of Oakland. Across the bay, his old sparring partner, Willie Brown, the once-all-powerful speaker of the California House, enjoyed a swansong as mayor of San Francisco. Marion Barry, the once-disgraced mayor of Washington (and the District of Columbia's de facto governor) is now back on the capital's city council.

Now Douglas Wilder, the Virginian grandson of slaves who became America's first elected black governor in 1990, has reappeared as mayor of his poor, ailing hometown, Richmond. Mr Wilder, an on-again, off-again Democrat, has no background in local government; but the business-friendly powerbroker is now recasting himself as an idealistic reformer.

For nearly 60 years, Richmond's mayor has been a largely ceremonial figure, selected by the city council from among its nine members. But in 2003 Mr Wilder persuaded Virginia lawmakers and Richmond voters to change the office so that the mayor would be directly elected (never mind that a decade ago he helped block the proposal apparently for fear it would dilute black electoral hegemony).

The pitch is that only a directly elected mayor can reform rotten Richmond. The slightly Stalinesque tower that houses the city's government has seen a spate of corruption scandals. But the bigger problem is racial Balkanisation. At present, blacks control the city's politics and whites its economy; and neither trusts the other.

Why did Mr Wilder run? In 2003 he said he had no interest in the job, but this summer the 73-year-old suddenly announced he would run. In order to meet the residency requirement during the election, he had to forsake his country mansion for a downtown flat. In the campaign, some cynics privately muttered that Mr Wilder, having emerged from a bruising battle with the Internal Revenue Service over a $1m political fund from his governorship, was attracted by the money. The mayor will be paid $125,000 a year. That didn't stop the old charmer carrying all the districts of the city, black and white.

Running for mayor may prove a lot easier than the job. Mr Wilder faces a long list of problems: an escalating homicide rate attributed to the drug trade; an expensive public-school system virtually abandoned by whites; alarmingly high rates for sexually transmitted diseases and teenage pregnancy; and a rising number of poor, black households without health insurance. On the plus side, the city's old commercial district is being restored.

Interestingly, Mr Wilder seems to be focusing on how he will govern the city rather than what he will do. Since his election, the smooth operator has announced that he will replace the city manager and police chief. Now he wants to ask the state legislature, which in Virginia parcels out power to localities, for sweeping executive authority. This would include a line-item veto over the city's budget, similar to that of Virginia's governor.

This request has set off alarm bells among the city's politicians. When voters approved the plan to elect

the mayor, they were told—by Mr Wilder as it happens—that the mayor's powers would be limited to hiring and firing the city manager (who is responsible for day-to-day operations). Now it seems Mr Wilder is anticipating battles with both the city council and the directly elected school board. His solution is to attempt to rule by executive fiat.

To the extent Mr Wilder is ruffling the city's politicians, his power-grab may be no bad thing; certainly voters don't mind one jot. But at some point he will have to decide what to do with that power. That will show whether the old pragmatist really has some serious ideas about how to reform his hometown.

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California's broken government

It never ends, Arnold

Dec 2nd 2004 | LOS ANGELES
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Another big budget hole and talk of dramatic ballot initiatives

Get article background

DECEMBER is often the cruellest month for California governors: it is the moment when the serious haggling begins in Sacramento over the budget that the governor unveils in early January. The current occupant is hard to fault when it comes to budget-balancing metaphors: Arnold Schwarzenegger would “tear up the state's credit card”, “blow up the boxes of government”, and so on.

Yet the reality is that the current budget, for the year ending next June, has been balanced only by getting the voters to approve some $15 billion in new borrowing. As to the future, perhaps the governor should take to heart the sobering analysis of the non-partisan Legislative Analyst's Office:

> According to our projections, the state is facing a year-end shortfall of $6.7 billion in 2005-06. Over the longer term, absent corrective actions, the state faces persistent annual current-law operating deficits that peak at nearly $10 billion in 2006-07, before narrowing somewhat in subsequent years.

“Corrective actions”, of course, is code for either raising taxes or cutting spending. The first of these would offend the governor's Republican base; the second would upset the Democratic majority in the legislature (or the “girlie men” of Schwarzenegger lore). Since two-thirds of both houses of the legislature are needed to pass the budget, political gridlock looks likely.

Faced with a similar problem, one of Mr Schwarzenegger's Republican predecessors, the now-sainted Ronald Reagan, raised taxes in his first year. The betting is that at some point in his tenure the Gubernator will have to follow suit. After all, to balance the budget with spending cuts alone would mean cuts in the state's health and social services of up to 10%.

That might not worry the more extreme conservatives within his own party, but Mr Schwarzenegger's brand is Republican-lite—and he is married to a Kennedy, to boot. Moreover, he has just replaced his first finance director, the stern Donna Arduin, with another moderate Republican, Tom Campbell, a former congressman who certainly dislikes taxes, but is seen as a more congenial figure by Democrats.

The immediate likelihood, therefore, is for another serving of fudge in the 2005-06 budget. After all, the good news for Mr Schwarzenegger is that he still has $3.5 billion left over from the $15 billion borrowing already authorised by the voters. Add in another $1 billion or so from better-than-predicted economic growth, and the governor should be able to balance the 2005-06 budget without too much trouble. Indeed, the anti-tax California Taxpayers Association says that the General Fund (which accounts for four-fifths of the total budget) can be balanced merely by restraining the growth in spending to 4.2%.

The problem is that these numbers come with plenty of footnotes. For instance, a law requiring plaintiffs to surrender to the state 75% of their punitive-damage awards has been cleverly neutered, depriving the budget of around $450m. Similarly, predictions of $300m this year from gaming pacts signed by several Indian tribes seem to have been optimistic.

So there is likely to be a hole to plug next year—which returns the debate to lower spending or higher taxes. Unless of course a governor who has relied so heavily on direct democracy can change the nature of the debate. Hence the interest in two mooted ballot initiatives.

First, a conservative group called Rescue California, which helped gather signatures to recall the previous

big-spending Democratic governor, Gray Davis, wants to launch a ballot initiative that would limit spending increases to the rates of inflation and population growth. That initiative would go before the public in June 2006—just a few months before Mr Schwarzenegger comes up for re-election.

More dramatically, Mr Schwarzenegger is hinting he might call a special election next year—and ask voters to back a broad reform package. This would include redrawing the state's absurd legislative boundaries (which protect incumbents and explain the extremism in Sacramento) alongside various long-overdue bureaucratic reforms. This may be a scare tactic to get the legislature to be more cooperative. But the only chance of reforming Californian's dysfunctional government lies with a big-bang approach.

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Californian women

Asians on top

Dec 2nd 2004 | LOS ANGELES
From The Economist print edition

Eastern promise

California female labour-force participation*, 2001

Race	% in labour-force	Average wage, $ per hour	% of California women
Asian, US born	84	19.3	2
White, US born	77	18.8	44
White, foreign born	64	17.2	5
Asian, other foreign born	74	16.7	11
Black	73	16.0	6
Asian, SE Asia born	60	15.8	2
Latinas, US born	74	15.1	10
Latinas, foreign born	58	10.4	19

Source: Public Policy Institute of California *Aged 25-59

It's simple: education is the key to success

WOMEN, according to Chairman Mao, hold up half the sky—but in California some are better rewarded for this effort than others. According to a new study from the Public Policy Institute of California, Asian women born in the United States outstrip all their sisters in terms of earning power.

The average hourly wage for American-born Asian ladies in 2001 (the latest year with reliable figures) was $19.30, with American-born whites coming next (see table). On the bottom rungs of the ladder came Latinas: if born abroad, they earned a mere $10.40 an hour (though this was comfortably above California's then $6.25 minimum wage); if born in America, they managed $15.10 an hour.

Education is the biggest reason for the ethnic disparities. Some 55% of California's American-born Asian women have at least a bachelor's degree, and an impressive 84% of them either have jobs or are looking for them. By contrast, only 14% of American-born Hispanic women have a bachelor's degree and only 74% of them are in the labour market. Meanwhile, Latinas born abroad are often condemned to low-paying jobs by an even skimpier education or a poor knowledge of English. Much the same can be said of Asian women born in South-East Asia, a category that includes refugees from Laos, Vietnam and Cambodia. The institute calculates that they earned an average of $15.80, almost $1 less than other foreign-born Asians.

But education is not the only factor in play for California's women. Larger families make it more difficult for Latinas to go out to work in the first place; blacks often live too far away to commute to well-paid jobs; and just as Asians may benefit from high expectations, so other groups may suffer from low ones.

The institute makes an attempt, heroic or politically correct, to adjust for such factors, imagining, for example, that a foreign-born Latina has the same family structure, education and place of residence as the average Californian woman. That brings the average wage for foreign-born Latinas up to a more respectable $15.20; yet American-born Asians still rule the roost. But before the golden girls get too happy, the institute reckons that Californian women of all sorts tend to earn roughly 20% less than their menfolk do.

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Women in farming

The new land girls

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Why the fairer sex is better with goats, chickens and stockbrokers

AS THE morning sun covers the fields Lyn Garling shuts off a water pipe, protecting it from ice. With snow just weeks away, she has eight calves to fatten, a pig to kill, steers, chickens and geese to attend to. Though Thanksgiving is over, she has to sort out the Christmas turkey orders, too. “There's always something to do,” she says, spitting forcefully on the ground.

As the female owner and operator of an organic poultry and meat farm, Ms Garling is not as unusual as you might think. Though farms are generally on the way out, squeezed by high land costs and low profits, farms run by women are on the increase. A recent survey by the Department of Agriculture (USDA) showed that Pennsylvania lost 2,000 farms between 1997 and 2002 but the number managed by women rose by 1,000. Vermont and Maine are also leading the trend.

Why is it happening? Laurel Hoffman from the new Pennsylvania chapter of the Women's Agricultural Network (WAgN), a non-profit group, gives several reasons. Some women farmers lose their husbands through death or divorce, then stay on. But others take up the hoe for more idealistic reasons, such as environmental worries about hormones or pesticides.

Women may also be better suited to farming 30-40 acre smallholdings of the sort that abound in Pennsylvania. They have arguably always been better than men at dealing with small animals, such as chickens and goats, which many tinier farms rely on. But they also make better salesmen than the grouchy, reclusive male farmers of yore. This matters now that many small farms are more similar to country hotels. Many farms on the east coast are opening their homes to stockbrokers, bankers and other urbanites for “holiday farming”.

Ms Garling, who also works part-time at Penn State University, knows why she farms: for the challenge, and to live in the country. Her farm, Over the Moon, sells free-range poultry and eggs, grass-fed beef and veal and organically-fed pork. On Thanksgiving eve she personally delivered 75 organic turkeys to her clients, several of them local markets. Recently, she began selling the remains of her birds and animals as organic petfood—an untapped market in these parts.

With more women on the land, various organisations are pitching in to help. In Pennsylvania, WAgN holds workshops on useful topics such as “How to Buy a Used Tractor”. The talks are always packed. In October Penn State University held a “Women in Dairy 2004” conference. At the annual state farm show in January, there will be a special “women in agriculture” day. The following month, the Pennsylvania Association for Sustainable Agriculture will host its second “Women in Agriculture” conference, covering everything from cash-flow to stress reduction through stretching.

Women farmers insist that they would be even more in evidence if older male farmers trusted their daughters to do “men's work”. That said, women, no less than men, struggle to make a profit from farming. Many, like Ms Garling, work part-time elsewhere so that their farms at least break even. The labour is hard on backs and, for women, the predominantly male culture is tough as well.

At a Sunday evening knitters' party at Ms Garling's farmhouse, women farmers joke about smart-alecky comments from male clerks in farming stores, conferences full of “men in John Deere hats talking about their tractors”, and the indignity of having to wear work clothes made for men. To demonstrate, Ms Garling models her maroon coverall, the smallest she could find, which swamps her.

Even so, women say the quiet and independence makes everything worth it. Ms Garling has to go off to her university job, but first feeds her calves with hay. She has a 13-hour day ahead. Asked whether she

regrets farming, she shakes her head and smiles. “I wouldn't change my lifestyle for the world.”

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Puerto Rico and the mainland

The ties that bind

Dec 2nd 2004 | VIEQUES
From The Economist print edition

AP

Even now that the bombing has stopped, the navy is not off the hook

IF THERE is one rule of Puerto Rican politics, it is that all the big decisions are still made back on the mainland. A federal district judge in Boston has become the pivotal figure in the election for governor of the dependency. When counting was halted on November 2nd, Aníbal Acevedo Vilá of the Popular Democratic Party, which favours keeping commonwealth status, led Pedro Rosselló of the New Progressive Party, which wants full statehood, by 3,880 votes. But that ignored 28,000 so-called “mixed” ballots where voters basically split their choices among the parties.

Up in Boston, Judge Daniel Dominguez wants these ballots to be counted, but not added to the official total. This seems to have angered everyone. Mr Acevedo Vilá has sued to return the dispute to Puerto Rico's Supreme Court. Meanwhile his supporters have held protest marches. “The future of the electorate is being decided in Boston by a federal judge appointed by a president they didn't vote for and confirmed by a Senate in which they have no representation,” notes Luis Gutierrez, a congressman from Illinois whose family comes from Puerto Rico and advocates its independence.

Nowhere symbolises Puerto Rican resentment with America better than Vieques—a speck of land off the eastern tip of Puerto Rico's main island. For decades, the American navy used Vieques as a bombing range. In 1999, protests began in earnest after an errant bomb killed a security guard; in May 2003, the navy gave up the last of its land and pulled out for good.

Yet talk to the people of Vieques today, and there is little sense of victory. A row of white wooden crosses at the camp's old front gate is a stark reminder that cancer rates on the island are significantly higher than elsewhere in Puerto Rico (and the medical facilities are worse). There are also worries about contaminated vegetables and seafood.

Most of the reclaimed island remains off-limits to the locals. The 9,400 residents are wedged on a narrow strip of land across the middle of Vieques. Much of the rest has been designated a wildlife refuge; but unexploded bombs and other hazards make much of it unsafe for humans.

In theory, the navy is cleaning this up under the supervision of the Environmental Protection Agency (EPA), but progress has been slow. Only $4.3m has been spent so far on decontaminating a former munitions storage depot on the west end of Vieques. Cleaning up the even more contaminated east end, where the live-fire zone used to be, has not started as the navy, EPA and Puerto Rican government wrangle over the scope of what will be done. “It's going to be expensive and it's going to take a very long time,” admits Ben Barry, an EPA official. “They say the bombs went ten feet into the ground,” says Edwin Torres, a municipal official who went to jail for civil disobedience when the navy was there. “Anybody coming along to start a bonfire or watch turtles could explode.”

In the best American tradition, the residents are taking some of their grumbles to the courts. A huge claim against the navy for health problems is being organised by Eaves, a Mississippi-based law firm that has represented Gulf war veterans and asbestos victims in other cases. Bif Browning, an environmental investigator who has spent six years on Vieques for Eaves, insists that the navy used depleted uranium and even napalm on the island, and claims hair tests on residents show toxic levels of mercury, arsenic, lead, cadmium and aluminium.

So far, the navy has not accepted responsibility, insisting there is no proof it harmed residents. Earlier this year, members of the Hispanic caucus in Congress asked the secretary of the navy to release detailed records of all the substances used on and around Vieques. No response yet.

But the news is not all bad. After much pushing in Washington, Vieques is soon to be officially listed as a federal “superfund” site, making the eastern tip a high priority for a clean-up. Meanwhile, the western end of the island already boasts a few blissful beaches. Both seabirds and ornithologists are returning. And property values are rising as Americans look for retirement and holiday homes.

Indeed, many of the same activists who are pursuing the navy also have their eye on a new enemy from the mainland: unscrupulous property developers. “Now we're in danger of bombardment by powerful political and economic interests,” says Robert Rabin, a longstanding resident and leading activist. “They'll turn Vieques into another St Thomas or St Croix if we're not careful.”

As for the two gubernatorial candidates, both have tried to depict themselves as friends of Vieques. Mr Rosselló had talks about the island with President Bill Clinton during his former term as governor, but he is seen as too close to the property developers. Mr Acevedo Vilá's party has historically been friendlier towards the people's struggle. But that, like so much in Vieques, is now in the hands of somebody on the mainland.

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Lexington

America's one-party state

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From The Economist print edition

If you loathe political debate, join the faculty of an American university

TOM WOLFE'S new novel about a young student, “I am Charlotte Simmons”, is a depressing read for any parent. Four years at an Ivy League university costs as much as a house in parts of the heartland—about $120,000 for tuition alone. But what do you get for your money? A ticket to “Animal House”.

In Mr Wolfe's fictional university the pleasures of the body take absolute precedence over the life of the mind. Students “hook up” (ie, sleep around) with indiscriminate zeal. Brainless jocks rule the roost, while impoverished nerds are reduced to ghost-writing their essays for them. The university administration is utterly indifferent to anything except the dogmas of political correctness (men and women are forced to share the same bathrooms in the name of gender equality). The Bacchanalia takes place to the soundtrack of hate-fuelled gangsta rap.

Mr Wolfe clearly exaggerates for effect (that's kinda, like, what satirists do, as one of his students might have explained). But on one subject he is guilty of understatement: diversity. He fires off a few predictable arrows at “diversoids”—students who are chosen on the basis of their race or gender. But he fails to expose the full absurdity of the diversity industry.

Academia is simultaneously both the part of America that is most obsessed with diversity, and the least diverse part of the country. On the one hand, colleges bend over backwards to hire minority professors and recruit minority students, aided by an ever-burgeoning bureaucracy of “diversity officers”. Yet, when it comes to politics, they are not just indifferent to diversity, but downright allergic to it.

Evidence of the atypical uniformity of American universities grows by the week. The Centre for Responsive Politics notes that this year two universities—the University of California and Harvard—occupied first and second place in the list of donations to the Kerry campaign by employee groups, ahead of Time Warner, Goldman Sachs, Microsoft *et al*. Employees at both universities gave 19 times as much to John Kerry as to George Bush. Meanwhile, a new national survey of more than 1,000 academics by Daniel Klein, of Santa Clara University, shows that Democrats outnumber Republicans by at least seven to one in the humanities and social sciences. And things are likely to get less balanced, because younger professors are more liberal. For instance, at Berkeley and Stanford, where Democrats overall outnumber Republicans by a mere nine to one, the ratio rises above 30 to one among assistant and associate professors.

“So what”, you might say, particularly if you happen to be an American liberal academic. Yet the current situation makes a mockery of the very legal opinion that underpins the diversity fad. In 1978, Justice Lewis Powell argued that diversity is vital to a university's educational mission, to promote the atmosphere of “speculation, experiment and creation” that is essential to their identities. The more diverse the body, the more robust the exchange of ideas. Why apply that argument so rigorously to, say, sexual orientation, where you have campus groups that proudly call themselves GLBTQ (gay, lesbian, bisexual, transgendered and questioning), but ignore it when it comes to political beliefs?

This is profoundly unhealthy *per se*. Debating chambers are becoming echo chambers. Students hear only one side of the story on everything from abortion (good) to the rise of the West (bad). It is notable that the surveys show far more conservatives in the more rigorous disciplines such as economics than in the vaguer 1960s “ologies”. Yet, as George Will pointed out in the *Washington Post* this week, this monotheism is also limiting universities' ability to influence the wider intellectual culture. In John Kennedy's day, there were so many profs in Washington that it was said the waters of the Charles flowed into the Potomac. These days, academia is marginalised in the capital—unless, of course, you count all the Straussian conservative intellectuals in think-tanks who left academia because they thought it was rigged against them.

Bias in universities is hard to correct because it is usually not overt: it has to do with prejudice about which topics are worth studying and what values are worth holding. Stephen Balch, the president of the conservative National Association of Scholars, argues that university faculties suffer from the same political problems as the “small republics” described in Federalist 10: a motivated majority within the faculty finds it easy to monopolise decision-making and squeeze out minorities.

Ivy-clad propaganda

The question is what to do about it. The most radical solution comes from David Horowitz, a conservative *provocateur*: force universities to endorse an Academic Bill of Rights, guaranteeing conservatives a fairer deal. Bills modelled on this idea are working their way through Republican state legislatures, most notably Colorado's. But even some conservatives are nervous about politicians interfering in self-governing institutions.

Mr Balch prefers an appropriately Madisonian solution to his Madisonian problem: a voluntary system of checks and balances to preserve the influence of minorities and promote intellectual competition. This might include a system of proportional voting that would give dissenters on a faculty more power, or the establishment of special programmes to promote views that are under-represented by the faculties.

The likelihood of much changing in universities in the near future is slim. The Republican business elite doesn't give a fig about silly academic fads in the humanities so long as American universities remain on the cutting edge of science and technology. As for the university establishment, leftists are hardly likely to relinquish their grip on one of the few bits of America where they remain in the ascendant. And that is a tragedy not just for America's universities but also for liberal thought.

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Correction: campaign finance

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In our article on campaign finance, ("Money, politics and more money", November 20th) we said that government money for presidential primaries is limited according to the amount of cash raised; in fact, the limit applies to money spent. We should also have made clear that the campaign-spending figures came from the Centre for Responsive Politics.

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Colombia's paramilitary demobilisation

Dystopia disarmed?

Dec 2nd 2004 | CAMPO DOS
From The Economist print edition

AFP

The demobilisation of Colombia's right-wing paramilitary groups has started at last, but the process carries a series of risks

Get article background

WHEN Marta Bustamante was 12, paramilitary troops arrived and gunned down her father as he was drinking with friends. Yet Miss Bustamante, now 21, does not hold a grudge. “At least they left him to be buried,” she shrugs.

Last week the heirs to her father's killers were back. Campo Dos, a swampy hamlet near Apartadó in the Urabá region, north-west Colombia's banana country, was the scene for the first demobilisation of troops from the right-wing United Self-Defence Forces of Colombia (AUC), in which 452 fighters known as the “Banana Block” gave up their weapons to the government. Up to 3,000 fighters are due to demobilise in ten regions across Colombia before the end of this year. In another 12 months, as the culmination of a rocky peace process that began two years ago, the 20,000-strong AUC promises to disarm entirely.

Formed in the 1980s to battle Colombia's left-wing rebels, the FARC, in the absence of a strong central government, the AUC has—like the FARC—largely turned into a drug-trafficking ring. Just last week, the Colombian Supreme Court approved United States extradition requests on drug-running charges for senior figures from both groups. That leaves Álvaro Uribe, Colombia's president, with a dilemma: signing only the FARC extradition order would look strange, but if he signs both he jeopardises the peace talks with the AUC, whose leaders refuse to demobilise if it means ending up in American jails.

But there are more serious obstacles to the peace process. The biggest is the lack of a legal framework for judging the crimes of demobilised fighters. Most of those in Campo Dos will go home after ten days and receive a pardon for the offence of joining an illegal army. But an unknown number who have committed more serious crimes, including murders and kidnappings, will have to remain in custody—where is unclear—while Mr Uribe and Congress haggle over a law for dealing with them. The bill has been delayed because Congress has been busy changing the constitution to allow Mr Uribe to seek re-election; that change passed this week but still has to get through the courts.

At Campo Dos, the results of the confusion were clear last week. Young fighters grilled interior ministry officials with alarming specificity about which crimes were pardonable. One asked whether escaping from jail earned a pardon, even if someone was killed in the process (the answer was yes to the jailbreak, no to the murder). Another wanted to know the punishment for killing FARC civilian informants (the officials

didn't know).

Feeling insecure

A still tougher question is what the demobilisation will mean for ordinary Colombians like Miss Bustamante, caught in the crossfire of the 40-year-old conflict. She worries that in historically violent and remote areas like Urabá, with the AUC gone, the FARC may return and take revenge on villagers who for years had no choice but to collaborate with the AUC.

The government is therefore grappling with how to tame large swathes of the country. Since taking office, Mr Uribe has strategically placed troops in urban areas long lost to the FARC. This strategy, known as “democratic security”, has dramatically reduced the numbers of murders, kidnappings and terrorist attacks. But capturing and maintaining the vast rural spaces is another matter. By some estimates, the AUC is present in over one-third of Colombia's municipalities, many of which have lacked a real government presence for decades. In the past, the government has relied on the paramilitaries' help against the FARC as a common enemy; now it is trying to dislodge them both.

Alfredo Rangel, a Bogotá-based defence analyst, argues that the peace process with the AUC is therefore itself a big security risk. The government, he says, does not have the money or the manpower to take control of the AUC's terrain while also trying to sustain the massive anti-FARC offensive in the south, known as Plan Patriot, which already ties up 18,000 of the army's 160,000 troops. “It's either demobilise the paramilitaries,” says Mr Rangel, “or maintain ‘democratic security’.”

Which is why the Urabá demobilisation is, in fact, something of a charade: a low-risk showcase for both the government and the AUC. Since the mid-1990s, the AUC has almost exclusively dominated the region. Two other paramilitary forces, one of them larger and more powerful than the Banana Block, will not demobilise and will remain guarding the area. At least 500 army troops have been sent there, and 800 police, who have established the first police station in 27 years in nearby Nueva Antioquía. The region remains violent and, being close to both oceans and the border with Panama, is a drug- and arms-running corridor. But there is no real risk of the FARC retaking control, in contrast to Catatumbo, where 1,400 fighters are to be disarmed.

True, the Urabá demobilisation is real, unlike some previous ones, such as the one in Medellín a year ago, when the AUC recruited street thugs to pose as paramilitaries. But it will not be the first one for many Banana Block fighters: some joined the AUC after serving in another group, the Popular Liberation Army, in 1991.

And there is a risk that it won't be their last. Commanders last week urged their demobilising troops to become civilian informants against the FARC. In the past, such activities have quickly turned violent, as former troops formed private security firms and took the law into their own hands. “If we all become volunteers,” says a Banana Block commander known as Ernesto, “there might be 1,000 soldiers, but we will be 5,000 or 10,000. This way, together, we can combat the FARC.”

AFP

Happily ever after?

Local residents, however, worry most about the possible power vacuum if the paramilitaries leave. In other, more troubled regions, such as Catatumbo, some residents are fleeing. In Urabá, they are staying the course, at least for now. “We are not going back to live under the [FARC] guerrillas,” said Gustavo, a bar owner in Apartadó. “If they come back, we will give them bullets.”

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Antigua and Barbuda

Counting the pennies

Dec 2nd 2004 | PORT OF SPAIN
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Small country, smaller budget

ALTHOUGH Antigua escaped Hurricane Ivan back in September, its finance minister, Errol Cort, had devastation aplenty to deal with in his November 30th budget. When Baldwin Spencer's United Progressive Party (UPP) won an election last March, it found the coffers empty—not just of cash, but of any papers to track it. Days before the poll, the prime minister's office was stripped of files detailing debt agreements and spending contracts, a parting kick from Lester Bird and his family's Antigua Labour Party (ALP)—in office, with one short break, since 1951.

An IMF report published two weeks ago points up the problems. Debt is 137% of GDP—more than double prudent limits. Some 37% of the workforce are on the government payroll. Their salaries eat up 60% of government revenue; debt service takes another 35%. Expenditure control and recording broke down almost a year ahead of the election. Arrears are piling up at a rate of 10% of GDP each year. Tourism has stagnated. A massive one-off adjustment is needed—and even that would leave debt at over 100% of GDP in five years' time.

Mr Cort's budget is unlikely to provoke unrest. Income tax is back, for the first time since 1977, but only for the highest-earning 25%. There will be a 5% sales tax, but higher pensions, free school meals and tax cuts on basic foods. Spending on civil service salaries will fall by 20%, but mainly through voluntary redundancies. Sensibly, ministers have volunteered to accept a 10% pay cut themselves and have avoided raising petrol prices, a sure recipe for a damaging minibus owners' strike.

But fully one-fifth of the budget speech dealt with Allen Stanford, a Texan by birth, Antiguan by passport, who in Mr Cort's words “dominates the investment landscape”. He owns two airlines, two banks, a property company and a newspaper. The Bird family borrowed $85m from his companies—11% of GDP. He was deeply involved with schemes for an overpriced hospital, and ALP ministers, said Mr Cort, accepted his “very generous favours”.

Mr Stanford has now offered to pay for a library and a higher-education complex, write off $18.5m in debt, set up a $3.7m fund to help start-up businesses, and outsource building work to local contractors. In return, he will get a green light to buy eight square kilometres—almost 2% of the country—to build a $1.1 billion six-star resort with 1,000 staff. He will pay a flat tax equivalent to almost 7% of the government's current take from all sources.

Too good to be true, say some longstanding UPP supporters. Besides a visceral mistrust of Mr Stanford and all his works, they fought tooth-and-nail eight years ago to block a scheme for the same site by a Malaysian developer, Tan Kay Hock. Special legislation backed that scheme—but Mr Tan failed to follow through. Conservationists fear for coral reefs, mangroves and marine life. If the country needs hotel investors, they say, there are plenty of derelict properties elsewhere that need reviving.

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Chile's armed forces

Unravelling a tortured past

Dec 2nd 2004 | SANTIAGO
From The Economist print edition

The armed forces are finally found guilty of the dictatorship's abuses

Get article background

ALMOST 15 years after the end of Augusto Pinochet's dictatorship, Chileans have been confronted with the magnitude and cruelty of the torture it inflicted. After hearing the testimonies of 35,000 political detainees, an official commission has concluded that torture was a habitual practice of the armed forces and police throughout the dictatorship.

The evidence, of course, was always there. Some victims, if not many, talked about it. A few wrote books. And the main methods of torture described in the report released this week, such as repeated beatings, electric shocks and mock executions, are no surprise, although the sexual violence suffered by almost all women detainees—some raped by specially trained dogs, others bearing torturers' children—is particularly shocking.

However, perhaps more importantly, the report overturns the myth that torture was just the work of sick-minded, over-enthusiastic subordinates. Instead, it is revealed as a systematic policy, financed by the budget and practised in more than 1,100 detention centres around the country. And, even more importantly, not even the armed forces dispute the facts.

Indeed, for them, the report is a hard blow. Among serving officers, there is reportedly frustration at being caught up in the blame for events that happened under a different leadership. But ahead of the report's publication, Juan Emilio Cheyre, the army commander, admitted—if somewhat ambiguously—the army's responsibility for “morally unacceptable” practices; the police and air force later followed suit. This week the navy publicly admitted that a training ship, the *Esmeralda*, had been used as a torture centre.

Such admissions are a sign of how Chile has changed. In 1991 a truth commission reported on deaths and disappearances (although not torture), but many of the regime's supporters continued to claim that the almost 1,200 people who disappeared had just gone underground or were in exile. That myth finally fell apart in 2001 when the armed forces, weakened by General Pinochet's arrest in London in 1998, admitted to the secret disposal of bodies. The arrest also encouraged torture victims to start lobbying, contributing to the torture commission's creation last year.

The government sees the commission's report partly as an end in itself. In addition, just over 27,000 victims whose testimonies could be verified will receive a pension and some benefits. The pension, admitted Ricardo Lagos, Chile's president, is “austere”. It will cost the state an estimated $70m a year, about the price of one of the ten F-16 fighter jets that the air force is currently buying. And with most of the victims over 50, the cost will soon drop.

But early reactions suggest that many victims ultimately want punishment for their torturers. That will be not be easy. Apart from the difficulties of getting evidence that would stand up in court, the dictatorship left in place an amnesty law for crimes between 1973 and 1978, when most of the torture occurred.

In addition, by respecting the victims' confidentiality, the commission has made their task more difficult, says Sebastian Brett of Human Rights Watch, a New-York-based organisation. The report includes only anonymous extracts of testimonies, and not the identities of alleged torturers. Not even the courts can have that information unless a victim presents it. That will make it hard for a victim pressing charges to get corroborating evidence from other testimonies. “We hope Congress will change this situation; in practice, it protects perpetrators,” says Mr Brett.

But, now that the myths about the dictatorship have been dispelled, the rest of the unravelling is likely to fall to the courts. And they are anxious to redeem themselves for their own failure—which the commission's report also highlighted—to protect the regime's victims.

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Canada and the United States

Where's the beef?

Dec 2nd 2004 | OTTAWA
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A summit without much substance

Reuters

So nice, these Canadians

GEORGE BUSH'S arrival in Canada on November 30th, with two weeks' notice, made his hosts scramble to compile an agenda, as well as protection for a visitor deeply disliked by many Canadians. But Paul Martin, the prime minister, has been anxious to improve a relationship which soured when his predecessor, Jean Chrétien, abruptly announced that Canada would not back the invasion of Iraq.

So why, after that estrangement, did Mr Bush make his first-ever official visit to Canada now? While businessmen cite the nearly $400 billion of annual cross-border trade, foreign-policy critics call this visit a “test run” for the Bush administration in its efforts to improve relations with European countries that opposed the Iraq war. If that is so, the results are mixed.

Certainly, the president got a warm reception from Canadian officials. But he refused Mr Martin's invitation to address both houses of Parliament, because, his people explained, he was wary of being heckled. Yet Canadians remember previous unpopular presidents, Richard Nixon and Ronald Reagan, braving it out before sceptical MPs and hostile crowds.

Mr Bush did manage a self-deprecating joke, noting that the crowds along the route from the airport had been friendly enough to wave at him “with all five fingers” (as opposed to a ruder greeting with rather fewer). And he sprang a further surprise with a trip to Halifax, to thank the people of the Atlantic provinces who fed and sheltered passengers from more than 200 aircraft diverted there during the September 11th crisis. Nevertheless, protests in both Halifax and Ottawa were vigorous, albeit largely peaceful, with criticisms of the Iraq war joined by the environmental slogan “More trees, less Bush”.

That reflects the widening cultural gulf between the two countries. The death penalty and opposition to gay marriage, and high rates of church membership, epitomise an increasingly conservative United States, while a more liberal Canada moves by stages to decriminalise marijuana and stands steadfast on universal health care. This week a much-hyped television contest for “the greatest Canadian” picked Tommy Douglas, the Saskatchewan premier who pioneered medicare.

The social differences are related to politics too: the United States' federal system pushes questions such as gay marriage further down to individual states, while Canada's constitution makes them more national issues. Canada, with its four main political parties, also has a more institutionalised “left” than America.

At the political level, however, relations are not so bad—at least, that was the message being broadcast. Mr Martin emerged from three hours of meetings with Mr Bush to claim that they had agreed on a practical work plan. But the joint statement was couched in the vaguest terms about common security and common prosperity, either because there had been no time to negotiate details or because it was mainly a repackaging of existing measures, such as the “smart borders accord” to speed commerce while countering terrorist threats.

So what did the meeting achieve, besides helping Mr Martin—fresh from a trip to Latin America and Africa—look more of a statesman and Mr Bush look less of a ruffian? Well, for Mr Bush's public it highlighted the importance of the border, which Americans take for granted though it sees over 200m crossings every year, whether of lorries hauling car parts or tourists with camper vans. The joint

statement also gave a passing nod to mutual efforts to protect the environment, with one-fifth of America's manufacturing and much of Canada's located around the Great Lakes that lie between them.

But if thornier issues were raised privately, they were not settled. Canada did not announce an expected new contingent of troops for Afghanistan next year. Mr Bush made friendly noises but no firm promise to lift the ban on Canadian beef (pointedly served to him at a summit dinner) which has lost ranchers over $4 billion in exports since one single cow was found to have mad-cow disease 18 months ago. And an oblique remark by Mr Bush revived the awkward issue of whether Canada will take part in his proposed ballistic-missile defence system, a scaled-down version of Reagan's “star wars”. Mr Martin is likely soon to face a free vote on it in Parliament, where opposition is strong—even within his own party.

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Nepal

Nothing to smile about

Dec 2nd 2004 | KATMANDU
From The Economist print edition

Reuters

King, politicians and Maoists fiddle while Nepal burns

Get article background

PROSPECTS for peace to calm Nepal's nine-year-old Maoist rebellion look as bleak as ever. The government has set a deadline of January 13th for the Maoists to enter talks. If they refuse, it says it will step up its military campaign and—bizarre threat—hold an election. The Maoists, recognising that the "constitutional forces" (the monarchy and the political parties) are in disarray, have spurned the ultimatum. A bloodier phase looms in a conflict that has claimed more than 10,000 lives.

The Maoists refuse to talk to the monkey—the government of Sher Bahadur Deuba, the prime minister—while the organ grinder, King Gyanendra, who appointed it, snubs them. Since sacking a government, also led by Mr Deuba, two years ago, the king has ruled through a succession of nominees. None has commanded legitimacy or respect.

Parliament remains dissolved, though one of the tasks the king set Mr Deuba was to arrange the election of a new one by the end of April next year. Of the other items on his royally-imposed mission statement, one—to form a multi-party government—Mr Deuba has managed. Its biggest constituent is a moderate communist party called the UML (Unified Marxist-Leninist), many of whose cadres are deeply unhappy at its joining the government. The third task—to achieve peace—is beyond this government, partly because the king himself is helping to thwart its efforts.

The Maoists make hay out of the differences among and within the political parties, which constantly subdivide, and between the parties and the monarchy. "It is a duel on the deck of the Titanic," says Kunda Dixit, editor of the *Nepali Times*, a weekly newspaper. The Maoists claim to control four-fifths of the country. That is an exaggeration. But it is true that the government does not exist in most rural areas and the vacuum is partially filled by roaming Maoist extortionists. The state's only representative is often a lonely school teacher, subject to harassment and possibly murder from one side or the other.

In these circumstances, the government's threat to hold an election looks hollow. But, it points out, if you can hold one in Afghanistan, why not Nepal? In the absence of peace talks, however, it is the Maoists who have staked out the democratic high ground. Their basic demand is for an elected assembly to draft a new constitution. Many of the parties are now prepared to accede to the demand. But the king, knowing this is a polite way of phrasing a republican ambition, will not.

So Nepal's agony seems endless. The gains made in living standards since 1990, when the monarchy gave up much of its power, have been squandered. According to figures published this week by the Asian Development Bank, Nepal, with an annual national income per head of just $241, is the world's 12th-poorest country. It is, however, top of one international league table: for unexplained disappearances. The Maoists abduct people in their thousands. But hundreds also vanish into the army's clutches. The poverty, inequality and ethnic and caste discrimination that fuelled the Maoist rebellion persist.

The Maoists, however, seem to have lost much of the popular backing they once enjoyed. Pushka Gautam, a Katmandu-based writer who was a Maoist commander until he defected in 2000, says they now rely on fear. The government has been much encouraged by a rebellion against Maoist exactions, such as forced conscription, in the district of Dailekh, once one of their strongholds. The Maoists have even apologised for the gruesome retribution that followed. The rise in abductions also smacks of weakness.

The Maoists have also, in recent months, changed their propaganda. They are now trying to whip up nationalist fervour against what they say is imminent Indian intervention on the king's behalf. They have even started trench- and tunnel-digging in some areas to prepare for Indian bombing. This is good propaganda, as well as providing defensive positions should the Nepali army mount a serious attack.

The Maoists are right that, since a new government took over in Delhi in May, Nepal has assumed a higher priority for India, because of the links it sees between Nepal's Maoists and its own Maoist rebellions and secessionist groups. Direct military intervention remains improbable because of its likely regional repercussions. But India faces a dilemma. Like America, it is arming and training the Nepalese army, which is under the king's command.

This helps contain the Maoist threat. But it also bolsters those in the king's camp who think that a military victory is possible and might be easier if the trappings of democracy were jettisoned. The information minister, seen as the king's man in the cabinet, has dropped hints of a more “authoritarian” government. Many human-rights activists and politicians in Katmandu expect the king and army to assume more direct power and, blaming the war, to suspend many civil liberties.

The consensus in Katmandu is that neither side can win a decisive victory. But Maoist hardliners may also harbour notions that a military campaign can bring triumph or strategic advantage. So far, the outside world has not done a good job of convincing either the king or the Maoists that accommodation is the best option.

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About sponsorship

ASEAN

Shame on the summiteers

Dec 2nd 2004 | VIENTIANE
From The Economist print edition

South-East Asia's leaders simply ignored Myanmar's crisis

Get article background

THREE rituals dominate the annual summit of the Association of South-East Asian Nations (ASEAN). There is always grousing about the high-handedness of Australia, which is not a member of the club. There is always discomfort—but no action—about the latest bout of political repression in Myanmar, which is. And the region's leaders always attempt to distract attention from these rows with the announcement of seemingly bold economic pacts, which, on close examination, are not quite as momentous as they sound.

This year's jamboree, in Laos's sleepy capital, followed the script to the letter. John Howard, Australia's prime minister, who had at last won a long-withheld invitation to the event, put noses out of joint by refusing to sign ASEAN's Treaty of Amity and Co-operation, an inoffensive non-aggression pact. Most delegates took this as a calculated snub, especially as his counterpart from New Zealand, who also attended, announced that she was inclined to sign it. Despite the fuss, however, Mr Howard clinched a deal to start negotiations for a free-trade pact next year.

Soe Win, Myanmar's new prime minister, was warmly welcomed at the summit, despite his country's failure to release Aung San Suu Kyi, its most prominent political prisoner. At last year's summit, ASEAN leaders had called publicly for her release, and secured a pledge from Myanmar's prime minister at the time, Khin Nyunt, to move towards democracy. Instead, Myanmar has extended Miss Suu Kyi's detention and has promoted the general thought to be responsible for the most recent crackdown on democracy activists, Mr Soe Win. In the face of this total rebuff, ASEAN's leaders decided to pretend that nothing was wrong. Their final communiqué harped on about the worrying state of affairs in Iraq and on the Korean peninsula, but made no mention of Myanmar.

On the economic front, ASEAN agreed to start talks on free-trade pacts with almost all its guests: Japan, South Korea, Australia and New Zealand. It is already in the midst of negotiations with China and India. The pact with China, which has got farthest, aims to create the world's biggest free-trade area, with a population of almost 2 billion and a current output of some $2.5 trillion, within the next six years. But officials at ASEAN's over-stretched secretariat gave warning that the club will struggle to hammer out all these deals simultaneously. Anyway, as it stands, the China deal would allow ASEAN to exclude many goods from the proposed preferential tariff.

This sort of fine print continues to undermine ASEAN's internal free-trade area, AFTA. The summiteers made much of an agreement to advance the abolition of all tariffs on 11 categories of goods, such as cars and parts, from 2010 to 2007. But Malaysia, ASEAN's biggest car market, preserves an earlier exemption, and so will continue to protect its state-owned car-maker, Proton. The task of identifying and dismantling non-tariff barriers has been given to the very national bureaucracies that imposed them in the first place. But ASEAN did at least agree to set up an independent dispute-resolution mechanism.

None of these disappointments, however, could dim the pride that Laos, one of ASEAN's poorest members, took in hosting its first major summit. The country's communist rulers gaily draped public buildings with hammer-and-sickle flags. They banned tourists from Vientiane, which did not have enough hotel rooms to accommodate both them and the delegates. They also barred unsightly trucks and buses from the city. Any questions about Laos's poor human-rights record were shunted aside. ASEAN's leaders, after all, are good at ignoring problems.

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Japan

Spend and defend

Dec 2nd 2004 | TOKYO
From The Economist print edition

Japan's government plans to upgrade and revamp its armed forces

Get article background

A DEBATE over its pacifist constitution has grabbed the headlines, but you can learn a lot more about Japan's defence strategy by looking at how it plans to spend its military budget over the next five to ten years. In the next week or two, Junichiro Koizumi's cabinet will approve a new National Defence Programme Outline, the first in nearly a decade. The new outline will set out the government's latest thinking on future threats, and guide its investments in arms and defence capabilities. It will probably place a heavy emphasis on the same two threats that America's Pentagon has lately been stressing: potential terrorist attacks, and the danger of rogue states such as North Korea combining ballistic missiles with weapons of mass destruction. Mr Koizumi's team is also debating how much to relax Japan's self-imposed limits on sharing military technology with allies.

The 1995 outline introduced few new ideas, even though the cold war had ended. In marked contrast, the government hopes to spell out clearly this time how Japan's defence needs are changing. Although Japan has been sending peacekeepers abroad since 1992, for example, the new outline is expected to say clearly that these missions are not just good deeds—they are a crucial way of promoting global stability, and therefore help to make Japan safer.

This commitment should pave the way for investments in new transport aircraft, so that Japanese troops can deploy overseas more quickly, along with weapons and equipment that will help peacekeepers defend themselves better and operate more flexibly. Japan's current peacekeeping force in Iraq, for example, has been holed up in a quiet corner of that country, reliant on Dutch troops for protection.

The government will also highlight the need for commando units and other flexible forces, which can respond to any terrorist threats that arise. Because Japan limits its defence budget to 1% of GDP, these sorts of changes will probably be paid for with cuts in tanks, conventional troops and other assets that were intended to slow down putative Soviet attackers. The 1995 outline called for 160,000 troops, but the number may now be cut by 10% or so.

One costly category that Japan plans to invest in is missile defence. It is already co-operating with America on basic research. But self-imposed restrictions on arms exports make it hard to work more closely. These efforts will hit a wall next year, experts say, unless the restrictions are relaxed a bit. Japanese defence contractors, such as Mitsubishi Heavy Industries and Ishikawajima-Harima Heavy Industries, are itching to expand co-operation in other military areas as well. As it often does, the government floated this idea publicly a month ago by having a panel of private-sector advisers recommend it in a report. But Mr Koizumi's junior coalition partner, the Buddhist-backed New Komeito, has balked at the idea.

New Komeito's leaders are willing to back a narrow decision—due during the next couple of months—to let Japanese firms share more technology with America for missile defence. Beyond that, however, they have pressed to remove any mention in the new outline of a general change in principle on arms exports. But Mr Koizumi may ignore their pleas, despite New Komeito's growing clout in the eyes of the ruling Liberal Democratic Party.

China is also gaining clout, and some Japanese defence experts are urging the government to mention its neighbour explicitly in the new defence outlines. That would certainly grab some headlines.

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China

Down and dangerous

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From The Economist print edition

Appalling fatalities in coal mines are prompting a rare outcry

AP

Into the infernal regions

EARLY on November 28th, volatile gases exploded deep underground at the Chenjiashan coal mine in China's Shaanxi province. Of the 293 workers in the mine, 127 were close enough to the surface to escape, but 166 others, working as far as 8km (5 miles) from the mine mouth, were left trapped.

Three days later, anger exploded into violence when family members of the trapped miners got official confirmation that all 166 were dead. Scores of them stormed the local emergency command centre, smashing windows and furniture and beating up officials. The families' outrage—together with considerable public consternation—had simmered during the three days of uncertainty and was further fuelled by stunningly frank reports in China's state-run press accusing the Chenjiashan mine managers of forcing the workers underground, despite serious mine fires a week earlier.

Although the death toll from this tragedy may have been especially high, and the precise circumstances particularly egregious, deadly disasters in China's coal mines are all too common. In terms of miner deaths per tonne of coal produced, China outpaces America by a factor of 100, and India by a factor of ten. The government had recorded 4,153 coal miner deaths, or more than 15 a day, in the first nine months of this year, and recent weeks have been even worse. An explosion on November 11th in Henan province killed 33 miners; three weeks earlier, another Henan accident claimed 148. On the same day that the Chenjiashan deaths were confirmed, a separate coal-mine accident in Guizhou killed 13.

Public complaints are growing. One Chinese internet commentator noted that China this year has lost four times as many coal miners as America has lost soldiers in the Iraq conflict. Aware of the unease, China's top leaders were quick to voice their concern for the Chenjiashan victims. But for the prime minister, Wen Jiabao, himself a mining engineer by training, it is not a new issue. Just before taking office last year, Mr Wen made a conspicuous visit to a coal mine in Liaoning province. Demonstrating his “closeness” to the people, Mr Wen descended 720 metres below ground to share dumplings with the men, and to call for improvements in the safety and conditions of China's miners.

But improvements will not be easy to achieve. According to one western expert on the Chinese coal sector, mine degasification equipment and structural reinforcement of mine shafts would raise production costs five-fold, making them far too expensive to implement. Existing safety regulations, meanwhile, are

often overlooked, especially at the tens of thousands of small and wildcat mines. The government has gone back and forth between cracking down on these mines for safety reasons, and then easing up again, simply because the nation needs their output.

China still relies on coal for two-thirds of its energy needs, and its energy-hungry economy is expected to continue growing by 8-9% annually. That means Chinese coal miners, for salaries of as little as $60 per month, will continue to perform the often perilous feat of going deep underground to dig it up.

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Afghanistan

Going straight

Dec 2nd 2004 | KABUL
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The Taliban are coming in from the cold

Get article background

MULLAH ROCKETY, a former Taliban commander shipped off to detention at Guantánamo, returned to Afghanistan with a mission during October's presidential election. His skills with a rocket-propelled grenade were not employed against American forces, as the Taliban leader, Mullah Omar, had urged; he was instead campaigning for Hamid Karzai in Zabul province, a hotbed of anti-government guerrilla insurgency.

More former Taliban seem to have taken part in that election than tried to wreck it, spurring hopes that the newly-elected President Karzai can now step up his efforts to win over moderates who are fed up with fighting in the mountains or exile in Pakistan. Popular support for the former rulers seems to be almost dead, even in their old bastions like Kandahar. With a booming drugs-based economy, there is far more interest in business than *jihad*, and the southern city is more peaceful than it was two years ago. “Why should anyone support the Taliban?” asks one young trader. “Now people have the future they never had when the Talibs were in power.”

But high in the mountains of Uruzgan and Zabul provinces, where many of the 18,000 American combat troops in Afghanistan hunt guerrillas, the insurgency goes on. Military operations cost America around $10 billion annually, and this year American troops have suffered more casualties than in any other year since 2001, perhaps because more than before have been engaged in aggressive operations.

But the hard-core Taliban who still fight from across the Pakistan border seem to have become less keen on martyrdom recently. American forces in the eastern city of Khost report a decline in attacks in the past three months, perhaps because Pakistan has finally stepped up efforts to seal its border. The Americans believe they are fighting a demoralised, divided movement that is unhappy with the leadership of Mullah Omar, if indeed he is still in charge. According to Colonel David Lamm, the coalition forces' chief of staff in Afghanistan, “The Taliban aren't dead yet and we haven't yet driven a stake through their hearts. But we are increasingly seeing them surrender. They come and knock on the doors of our bases and ask if they can give up.” Still, a low-level insurgency could drag on for years yet.

Since the fall of the fundamentalists in 2001, ex-Taliban like Mullah Rockety have quietly slipped back into minor positions of authority across Afghanistan's east and south. In many towns in this Pushtun

heartland, a quiet accommodation has already been reached with them. Asadullah Khalid, governor of Ghazni, has included ex-Taliban in his administration. He says his province has had almost no attacks in three months. “They are Afghan, they need to be part of this country,” he says. “But there will be no compromise with those who are criminal.”

Mr Karzai, due to be inaugurated on December 7th, is expected to begin fresh efforts to woo the moderates. The president has made it clear that any Taliban who want to come back and live as normal citizens are welcome to do so. The 150 or so top Taliban whom he has identified as linked to al-Qaeda are excluded, and no substantial government posts will be offered to any of them, but there is willingness in Kabul to compromise.

Some ex-Taliban are even considering forming a political party for next year's parliamentary elections, and there seems no legal reason why those without blood on their hands should not stand. A makeover can be expected—few voters want to turn the clock back—but a conservative, ethnic Pushtun party could do well at the polls. Mullah Rockety, who fought the Russians, joined the Taliban because they took on the warlords, and once berated Osama bin Laden for his extremism, has now set his sights on parliament.

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Taiwan

Blue on green

Dec 2nd 2004 | TAIPEI
From The Economist print edition

Will President Chen Shui-bian get the parliamentary majority he needs?

Get article background

LAST March, President Chen Shui-bian won re-election in Taiwan by 30,000 votes out of 13m cast. That slender majority has bedevilled politics ever since: but on December 11th, the president has a chance to seize control of parliament, and change the face of Taiwan's polity.

Mr Chen's opponents are the “pan-blue” alliance of Lien Chan of the Kuomintang (KMT) and his running mate, James Soong of the People First Party, a KMT splinter group. They insist that the presidential election was mismanaged and that the still unsolved election-eve shooting of Mr Chen, in which he was lightly wounded, was staged to get a sympathy vote. Their inability to produce evidence has not stopped them refusing to acknowledge the legitimacy of Mr Chen's government. But the chaos on the streets incited by the opposition after the presidential election and the obstructionism stemming from its control of the legislature throughout Mr Chen's first term have angered many Taiwanese.

Should Mr Chen's Democratic Progressive Party (DPP) and its smaller ally, the radically pro-independence Taiwan Solidarity Union, win a majority of legislative seats, the two—known as the “pan-greens”—have vowed immediately to pass a law stripping the KMT of any of the vast wealth acquired in its 40 years of one party-rule that it cannot legally account for. They also plan to launch investigations of human-rights abuses during that same period. For the KMT, which was still jailing—and sometimes murdering—its opponents only 20 years ago, and whose money-driven political machine has already been almost crippled by losing access to government coffers, this is a matter of life and death.

The DPP's campaign has, however, gone somewhat off-message. Mr Chen started out by telling Taiwanese about all the good things his government could do, if only it controlled parliament. But latterly he has focused on Taiwan's awkward international status, and such issues as reforming or rewriting its constitution. There is no chance the pan-greens will get the 75% super-majority needed to initiate constitutional amendment. But talking about such things angers both China, which sees it as a step toward Taiwan's independence, and Taiwan's protector, America.

For their part, the only real message the pan-blues have is that they should be elected to prevent Mr Chen from doing anything, in effect presenting gridlock as an end in itself. The Taiwanese electorate is therefore left with the far-from universally appealing choice of three more years without effective government, or trusting the sometimes erratic Mr Chen with real power.

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Congo, Rwanda and the UN

Is this the world's least effective UN peacekeeping force?

Dec 2nd 2004 | GOMA
From The Economist print edition

AP

Rwanda appears to be invading Congo again. The UN peacekeeping mission there, the world's largest, is twiddling its thumbs

Get article background

EIGHTEEN months after Rwanda and the Democratic Republic of Congo agreed to stop fighting, the two countries are again on the verge of war. Rwanda's president, Paul Kagame, has officially given notice that his troops will march into eastern Congo, and some reports suggest they already have.

The last time the Rwandans invaded, in 1998, they sparked a complex five-year war that left perhaps 3m dead, mostly from war-induced starvation and disease. A new conflict probably would not be as bad, but it is hardly surprising that the people of eastern Congo are terrified.

Congo's government is demanding UN sanctions against Mr Kagame and his entourage, and has vowed to send a large force to repel the invaders. Its army is hopelessly ill-disciplined, however, and no match for the Rwandans in a part of Congo that is much closer to Rwanda's capital than to Congo's.

For the past decade, Rwanda's justification for meddling in Congo has been the need to crush genocidal Rwandan rebels hiding in the Congolese rain forest. Though the lure of loot has also been a factor—Congo is fabulously mineral-rich—this claim has merit. The UN peacekeeping force in Congo (MONUC), the world's largest, is supposed to be disarming these rebels, but has failed to neutralise them.

Indeed, since MONUC was first deployed to Congo in 1999, it has consistently failed to keep anyone in the region safe. In two Congolese cities in 2002 and 2003, UN soldiers watched as hundreds of civilians were murdered outside their bases.

In May this year, they sat back as an unsavoury rebel chief seized control of Bukavu, Congo's fourth city, despite the presence of a large and well-armed MONUC garrison on the outskirts of town. The blue helmets could easily have scattered the rebels, but the only shots they fired in anger that week were at civilians demonstrating against their inaction. Three of the protesters died.

That same month in Bukavu, your correspondent joined South African peacekeepers on a night patrol to

rescue some nuns besieged in a convent by renegade troops. New in town, the South Africans got lost. After wandering around for an hour looking for a convent with a red gate, the captain in charge ordered his armoured personnel carrier to a halt outside a deserted house with a black gate. “Yes, I think we've found it,” he radioed back to base. “Everything seems quiet here, we're coming home.”

MONUC's chiefs have argued that they do not have enough troops for the job. They have a point. Though the UN Security Council has ordered the force to be expanded from about 10,000 to 16,000, military experts guess it needs about 50,000. It won't get that. Why, then, is the UN in Congo at all? MONUC argues that, though small, the mission serves as a deterrent. But whom does it deter?

The ragtag militias that effectively control the north-eastern region of Ituri delight in taking potshots at peacekeeping units. Deterrence, argues Jim Terrie of the International Crisis Group, a lobbying organisation, depends in part on potential enemies' belief “that you will actually do something. [But] there is very little belief that MONUC will do anything.”

MONUC has already indicated that it probably will not stop a Rwandan invasion. This may be because Rwanda has signalled that it will make only a brief foray into Congo to kill the rebels who threaten it, and then leave. But if so, that would hardly satisfy the people of eastern Congo.

Too little, too late

Indeed, it would be hard to exaggerate the UN's unpopularity. Some Congolese shake their fists or throw clumps of mud at passing UN patrols. Three months ago, militiamen burned 17 people to death while a detachment of MONUC troops 200 metres away, whose mandate authorised them to use force to prevent such massacres, did nothing. “Is MONUC here to do anything apart from count the bodies?” asked a Congolese witness.

MONUC's reputation has been damaged still further by revelations that some peacekeepers have been sexually molesting Congolese children. In the latest incident, a senior French civilian with the mission has been handed over to authorities in Paris and the UN has launched an investigation which insiders say will seek to discover whether MONUC has been penetrated by organised paedophiles who recruit their friends.

Last month, a mob in the eastern town of Goma, apparently under the misapprehension that your correspondent was connected to MONUC, smashed the windows of his car and tried to strangle him. He escaped only by pulling a wad of dollars out of his sock and throwing it in the air, and then driving off in the ensuing maul.

Morale among the blue helmets is not high. Many regard their posting to Congo as the height of misfortune. Some are ashamed to be part of such an indolent force. During massacres in Ituri's main town of Bunia last year, some Uruguayan peacekeepers suffered nervous breakdowns after watching atrocities they had been ordered not to prevent. One reportedly told his psychiatrist that goats were talking to him. When asked what they were saying, he replied, “They're shouting: ‘Help me! Help me!’”

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AIDS in Angola

Good news, maybe

Dec 2nd 2004
From The Economist print edition

Could Angola become the second African state to roll back AIDS?

Get article background

IF YOU were to imagine perfect conditions for the spread of AIDS, you might imagine somewhere like Angola. A long war split families, forced many women into prostitution and displaced 4m people. The return of peace two years ago brought traders, truckers and refugees from other parts of southern Africa, where HIV is rampant. A new survey shows that Angolan teenagers start having sex early and take many partners. Young women often sleep with men who are 15 years older. Only one Angolan in ten knows how HIV is spread. Few use condoms.

But a large study released on December 1st by the United Nations Children's Fund (Unicef) has found that Angola's epidemic is far less severe than expected. A previous survey, in 2002, had found that 5.5% of Angolan adults had HIV. Most experts assumed that this rate would have soared by now; some expected it to double.

But the new survey, which involved testing some 12,000 women at antenatal clinics in all 18 Angolan provinces, found that only 2.8% of them were infected. Assuming that HIV prevalence among the general adult population is higher than among pregnant women, (since AIDS reduces fertility, among other reasons), epidemiologists estimate that this implies an overall adult HIV rate of about 5%.

In other words, the epidemic in Angola is getting no worse, and may even be retreating. Given that HIV prevalence in neighbouring Botswana is nearly eight times worse than in Angola, this is what Alan Whiteside, a South African AIDS expert, calls “very, very good news”, if the data are accurate. Only one sub-Saharan African country, Uganda, has reduced HIV prevalence significantly, and only a few have managed to keep infections consistently low. Is Angola about to join this worthy club?

The Unicef study looks reliable. The sample group was big, though it may not have been perfectly representative, since only a third of Angolan women ever visit an antenatal clinic. Experts from Atlanta in the United States supervised the research. But Mario Ferrari of Unicef warns that “we should not sing victory at the moment.”

For one thing, the 2002 study may have been faulty, so Angola's HIV rate may not really be dropping. For another, the new study may have been carried out too soon after the end of the war to catch the predicted surge of new infections now that Angola is no longer isolated from its AIDS-plagued neighbours.

But still, the fact that AIDS has not yet taken hold in Angola means that “there is time for us to take action, to educate young people how to protect themselves,” says Mr Ferrari. Angola's “national plan” to fight AIDS has been feebly implemented so far, but could be strengthened.

Mr Whiteside thinks Angola may have some cultural advantages. Angolan boys, unlike most other southern Africans, are circumcised. Evidence from elsewhere in Africa suggests that this toughens the penis and so affords some protection against the virus. Young Angolans also talk quite frankly about sex, which may help. AIDS may yet devastate Angola, but Angolans nonetheless have an opportunity their neighbours missed long ago: to avert the catastrophe.

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Lifting landmines

Easy to lay, hard to dig up

Dec 2nd 2004 | SANTO ANTONIO, ANGOLA
From The Economist print edition

But some of the world's minefields are being cleared

AFP

Not an easy job

RATS, sniffer dogs and armour-plated bulldozers can help, but most mine-clearing is still done by hand, usually by a man with a pointed stick and a plastic mask. Antonio Cambanda, for example, is being paid by a group called the Halo Trust to clear a minefield near the village of Santo Antonio in Angola.

He has no metal detector, but it would not be much use anyway, since the ground is scattered with bullet casings. He scrapes the soil for 30 minutes at a stretch, before the sun and persistent flies force him to take a break. Occasionally he slashes at bushes, to scare poisonous snakes. Eventually, he uncovers a small blue box: a Cuban mine, probably laid in 1980. It is loudly blown up, eliciting no reaction at all from a nearby group of children. For them, explosions are as common as a cock-crow.

De-miners are rarely killed, but if they wear their helmets at a jaunty angle, the shock from a blast can break their necks. They make $6 a day in Angola, which is not a bad wage. Mr Cambanda clears a few square paces each day and may find one or two mines. It will take him and his fellow de-miners another decade to rid Angola's roads, bridges, fields and schools of the mines that they know about, some of which were laid as recently as 2002, when Angola's civil war ended.

In the five years since a global ban was agreed in Ottawa, nearly 40m landmines have been destroyed. Most were in stockpiles, but some 4m were painstakingly found and dug up. Nonetheless, the devices still kill or maim 40 people a day, lamented delegates to a landmine conference in Nairobi this week.

Some armies, such as Sudan's, continue to plant them. Guerrillas and rebels respect no treaties. Only the complete destruction of existing stocks and an end to their manufacture would cut off the supply. But that would require all countries to sign up to the Ottawa treaty. So far, 144 countries have, but China, Russia, Pakistan, India and the United States still refuse.

China is said to be considering signing, but America will not, mostly because minefields help keep North Koreans out of South Korea. Campaigners fret that American plans to switch to using mines that self-destruct after a few weeks (though not always reliably) will be used as an excuse never to sign the treaty. The men with pointed sticks will be prodding gingerly for a long time yet.

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Iran's nuclear ambitions

Still defiant

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From The Economist print edition

Talks between Iran and the Europeans will be fraught

AFTER ducking and weaving in the diplomatic crossfire, Iran has again managed to get through a meeting of the 35-nation board of the International Atomic Energy Agency, the UN's nuclear guardian, without being referred to the UN Security Council for its egregious breaches of nuclear safeguards. Instead, the IAEA's own guardians welcomed Iran's "voluntary" suspension of work towards producing uranium and plutonium as a confidence-building measure. Assuming it draws no more fire from the agency's inspectors, who will keep probing its nuclear past and monitor the suspension, on December 15th Iran will start talks with Britain, France, Germany and the EU to try to end the stand-off over its nuclear plans.

Once they all get round a table, the Europeans hope to talk Iran permanently out of the nuclear fuel-making business, since the uranium and plutonium dabbling that it claims is solely for generating electricity at some point in the future would also handily equip it for making weapons. Under a deal struck earlier last month, inducements could include outside supplies of nuclear fuel, a replacement for a heavy-water reactor that Iran says it plans to build for research, but which would be ideally suited for bomb-making, support for joining the World Trade Organisation, political talks and a new security dialogue.

Yet getting Iran to the table at all has proved tough. A similar agreement struck in October last year fell through. Inspectors kept turning up new evidence of wrong-doing, and Iran reneged on its promise to suspend all uranium enrichment. This time Iran tried to exempt preparation of some material for its enrichment machines from the ban, then some 20 of the centrifuges themselves (and it still wants to continue some research with these). But the Europeans put their foot down. Only a complete halt would help overcome what Mohamed ElBaradei, the IAEA's director-general, has called the "confidence deficit" created by Iran's past lies and cover-ups.

Whether the talks later this month will get very far is open to doubt. While celebrating an "historic opportunity" for Iran and Europe to slap down what he called the "unilateralists", this week Iran's chief negotiator insisted that his country would never give up its right to the nuclear technologies in question. But neither "unilateralist" America, nor the Europeans, believe Iran's claim of peaceful intent.

Inspectors may not have unearthed an Iranian bomb, but they have found most things short of that. This week's IAEA resolution makes clear that they are still not sure there are no undeclared nuclear goings-on in Iran. If Iran reneges on its suspension promise, or inspectors find more troubling evidence (they have been barred from two military sites), the Europeans say they will go back to the IAEA and to the UN. America reserves the right to take the issue directly to the Security Council, without the rest of the IAEA's board if need be.

Most of those on the board hope the Europeans will find a way to end to the crisis. Countries such as Brazil and South Africa, with some of the technologies Iran is accused of abusing, want nothing to impair their peaceful use of nuclear power. But the board's reluctance to bring Iran's catalogue of proven breaches to the Security Council, as it is obliged to do, opens up other dangers. An over-confident Iran may calculate it can restart uranium work after an interval and get away with it. And, as America's delegate to the IAEA pointed out this week, holding fire over Iran could damage the credibility of inspections and of the non-proliferation regime itself.

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Palestinians and Israelis

Barghouti's challenge

Dec 2nd 2004 | RAMALLAH
From The Economist print edition

From an Israeli jail cell, another Fatah leader is running for president

AFP

Vote for me, says Barghouti

WITH Yasser Arafat gone, his aging lieutenants had hoped that power would pass smoothly to one of their own. Mahmoud Abbas, the official candidate of Mr Arafat's Fatah movement, had hoped to face no serious rivals at an election to the presidency of the Palestinian Authority (PA) on January 9th. But on December 1st, his most popular rival revoked an earlier promise not to stand and joined the fray. Marwan Barghouti, Fatah's West Bank leader, is currently serving five life sentences in an Israeli jail for ordering attacks on Israeli soldiers and civilians. Angry young Palestinians love him, Israelis detest him, and the Fatah old guard fear he could split the movement.

On the same day, Hamas and Islamic Jihad, the two main Palestinian Islamist groups, called on their supporters to shun the presidential poll. Their gripe was that no date had been set for new parliamentary and municipal elections, which they may contest, unlike the presidency. Hamas especially wants to translate the popularity it has garnered through violence into political power.

Mr Barghouti's motives may be similar. His wife, Fadwa, said her husband had decided to run after receiving “hundreds of messages from the Fatah grassroots and other Palestinian figures and cadres”. It may also have occurred to him that he might win.

Mr Abbas, as Fatah's official candidate, has the Palestinian establishment behind him and hefty powers of patronage. He also has the support of the Palestinian middle class, which shares his opposition to violence, his support for law and order and his desire for sound relations with Israel, America and the Arab world.

But Mr Barghouti's supporters may be more numerous: the young, the poor, students, prisoners and their families. Refugees also back him, for his energetic support for their “right of return” to homes in what was Palestine before 1948 but is now Israel. For these constituencies, he is Palestine's supreme nationalist leader. He says he wants a two-state solution with Israel, and he argues that armed resistance is the way to achieve it. Recent polls suggest that, in a straight contest between the two men, Mr Barghouti would win.

But it could get rather complicated. For one thing, Israel's prime minister, Ariel Sharon, has made it clear he will not release Mr Barghouti from jail even if he is elected president. Mr Sharon is himself in trouble: the Israeli parliament rejected his budget on December 1st, leaving him scrambling to prevent his government from collapsing. But even were he to fall, it is not certain that any successor would be prepared to free Mr Barghouti.

Among Palestinians, the worst fear is that Mr Barghouti's challenge could spark violence within Fatah. The old guard enjoy power and its perks, and some of them have their own militias. They may be unwilling to go quietly. Mr Barghouti may not wish to spark conflict among his own people, but that could perhaps be the result of his candidacy.

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Ukraine

In search of plan B

Dec 2nd 2004 | KIEV AND MOSCOW
From The Economist print edition

Reuters

The opposition seems to have the upper hand in Ukraine's political crisis. But the regime may not be finished yet

Get article background

PERCHED, charioteer-like, on a slow-moving van, Petro Poroshenko and Yulia Timoshenko, two allies of Victor Yushchenko, rode through Kiev on December 1st, proclaiming their triumph to elated supporters. The Rada, Ukraine's parliament, had earlier passed a vote of no confidence in Victor Yanukovich, still (just) prime minister, who by the rigged official count beat Mr Yushchenko in the run-off election for the country's presidency on November 21st. In the tussle between the two Victors, one now looks vanquished. The real fight may be between Mr Yushchenko and President Leonid Kuchma.

The narrow vote in the Rada, which has put pressure on Mr Kuchma to dismiss Mr Yanukovich's government, was only the most dramatic of the week's legal and political set-pieces. Over the weekend, the Rada had voted to set aside the discredited election results. Ukraine's supreme court spent the week considering the Yushchenko camp's allegations of electoral fraud. At midweek the court was still deliberating, although the European Union's foreign-policy supremo, Javier Solana, said it was likely to abjure the result, after which a deal on new elections would be done. Mr Solana was just one of many bigwigs from Russia, Poland and other parts of the EU to shuttle in and out of Kiev.

Who actually has the power to set aside the election is a somewhat murky question. But his morale-boosting victories in the Rada contributed to Mr Yushchenko's biggest triumph, which was to keep the crowds who had first gathered on election night out on the snowy streets of central Kiev. They danced, they slept, they blockaded government offices—and they marched repeatedly up to the top of the hill where the court and Rada are situated, then back down to Independence Square. But above all they stayed, in their several hundreds of thousands. A pro-Yushchenko tented mini-city, sustained by donated food, occupies almost the whole of the city's main street. In a nearby park, where Mr Yanukovich's backers tried to establish a short-lived rival encampment, an exuberant pro-Yushchenko steel band is now ensconced, along with ice statues in the shape of his slogans.

Apart from one hairy incident on November 30th, in which Mrs Timoshenko appeared to incite an invasion of the Rada, the protesters have been extraordinarily peaceful. The Yushchenko team has established its own cordon between the crowds and the riot police guarding the presidential administration, whose barrier is festooned with flowers and orange memorabilia (the Yushchenko campaign's colour). When a small, plucky column of old people and priests marched through the orange throng, carrying icons and

blue-and-white Yanukovich flags, there were remonstrations but no molestations. When a young man, apparently drunk, turned up with a Yanukovich flag close to Independence Square, Yushchenko supporters posed for photographs with him.

This well-judged combination of palpable force with restraint has succeeded in concentrating political minds. So far the government has let the protesters alone—though there are credible reports that, on two occasions, plans were set in train to disperse the crowds. On the first, government officials reportedly scotched the initiative themselves. On the other, threatening troop movements near Kiev are said to have been curtailed after intervention from America at the very highest level.

The Yanukovich camp has tried another tactic: conjuring up the spectre of secession by the Russian-speaking southern and eastern regions, in which Mr Yanukovich is genuinely popular (because of his protection of heavy industry and his pledges to make Russian a second official language and to introduce dual Ukrainian-Russian citizenship). He attended a big regional rally on November 28th at which there was talk of “autonomy”. Impetuous threats to hold snap local referendums have been retracted, but Donetsk, Mr Yanukovich's stronghold, has rescheduled its poll for next month. This plays on fears that a schism in Ukraine, a heterogeneous country that has existed in its current form only since the collapse of the Soviet Union in 1991, is by no means impossible.

Yet it now looks as if Mr Yanukovich has only the slimmest chance of ever becoming president. The poverty of his tactics and his opponent's strength have frightened off allies who seemed ready to fight for the prime minister a week ago. Among them, it seems, may be Vladimir Putin, Russia's president. Mr Putin's decision to endorse Mr Yanukovich, by visiting Ukraine during the campaign and by rushing Ukraine-friendly legislation through Russia's parliament, always looked odd. Despite characterisations of Mr Yushchenko as “pro-western” and his opponent as pro-Russian, their foreign policies may not have differed much in practice. Mr Putin may just have wanted to show that Russia was still the boss in its so-called “near abroad”. His rush to congratulate Mr Yanukovich immediately after the election now looks plain foolish.

Olexiy Haran, of the Kiev-Mohyla Academy, says that Mr Putin's cack-handed intervention has “created a whole generation of Ukrainian patriots, including many in the Russified areas”. He has also provoked what some diplomats say is the most serious falling-out yet between post-Soviet Russia and the EU. Russian officials, many of whom still see Ukraine as a wayward province, not an independent country, are angry about what they perceive as western neo-imperialism. The Europeans and Americans wanted Mr Yushchenko to win but, unlike Mr Putin, they confined themselves, at least in public, to advocating honest elections.

Some say the Russians are still meddling. Mr Poroshenko believes that Russian troops are in Kiev to guard Mr Kuchma. This is vehemently denied by Russian officials, and by those in Kiev who ought to

know. Now Mr Putin, who is said to have acquiesced to fresh elections to sort out the mess, may be thinking of cutting his losses. Even before the no-confidence vote this week, Mr Kuchma was showing signs of ditching Mr Yanukovich. On December 1st Mr Yanukovich himself said the election was fraudulent, though he refused to resign as prime minister. But the key negotiations will now be between the Kuchma and Yushchenko teams.

Mr Yushchenko's people want him declared the winner immediately. Failing that, the big question is what sort of new elections to hold. To capitalise on his momentum and his opponents' confusion, Mr Yushchenko is adamant that there must only be a re-run of the second round, which he would almost certainly win, especially after mini-revolutions at state-controlled television stations. Mr Kuchma prefers to restage the entire procedure, which could take several months and might mean new candidates.

One such could be Serhiy Tihipko, who took time off from his day job as head of the central bank to chair Mr Yanukovich's campaign. This week, as the bank imposed emergency controls on cash withdrawals, he resigned from both positions. Some in Mr Kuchma's circle would have preferred to put up the feline Mr Tihipko, with his smooth demeanour and casuistic debating skills, as the government's candidate in the first place.

Late on December 1st, Mr Yushchenko also agreed in principle to Mr Kuchma's longstanding plan for constitutional reform to dilute the powers of the presidency, and augment those of parliament and the prime minister. Talks, and wrangling over the terms of a new election, will resume after the supreme court rules. Will Mr Yushchenko accept further compromises? And could he sell them to the thousands camped out in the Kiev snow?

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Romania's elections

One more dubious vote?

Dec 2nd 2004
From The Economist print edition

The left narrowly wins, but the result is disputed

A LITTLE fraud in Romania is, you might say, like a little snow in Siberia. Only to be expected, not really worth a fuss. But claims of trickery in the November 28th elections for parliament and president, however predictable, have been embarrassing for both Romania and the European Union. In the first place, Romania is on the verge of being promised membership of the EU in 2007. It should be now demonstrating its capacity to meet in full the EU's high standards of democracy. Second, a disputed election in Europe's backyard weakens the EU's moral authority as it resists the outcome of a rigged presidential vote in Romania's northern neighbour, Ukraine.

The Organisation for Security and Co-operation in Europe, which monitored Romania's elections, reported “concerns” that some voters had shown identity documents rather than registration cards at polling stations, opening the way to multiple voting. It said that this could “affect public confidence” in the result. But it thought that “administrative and judicial” remedies should suffice—not the re-run of the election for which the opposition was calling this week, or which has been demanded in Ukraine.

Any fiddles were probably too small to swing the result, even if they padded out the near-37% of the vote claimed by the ruling Socialist Party (PSD). Its centre-right challenger, the Justice and Truth Alliance, finished five percentage points behind. In the contest for the presidency, Adrian Nastase, the outgoing PSD prime minister, led Traian Basescu, the Justice and Truth candidate, by 41% to 34%, forcing the two into a run-off, to be held on December 12th.

Romania elects its parliament by proportional representation, so the provisional results point to a hung chamber. The swing votes rest with two smaller parties, the far-right Greater Romania Party which took 13% on Sunday, and an ethnic Hungarian party, the UDMR, which took just over 6%. The UDMR would happily go back into government with the PSD, or form a new one with Justice and Truth. The problem lies with the Greater Romania Party. It gets on fairly well with the PSD, though less well with Justice and Truth. But both big parties would prefer to keep it out of government, because the EU and the Americans see it as extremist.

Much now depends on the presidency. The office carries limited formal powers, but they include the right to nominate the prime minister. If Mr Nastase wins, he will probably appoint Mircea Geoana, the outgoing foreign minister, as head of a minority PSD government that relies tacitly on votes from the Greater Romania Party for its majority. If Mr Basescu wins, he can opt for cohabitation, or he may try to install a minority centre-right government that will fall in due course, paving the way for another general election.

This could be a good strategy. The PSD vote held up well this week, but the ground is shifting beneath it. It has been embarrassed by the leaking, just before the election, of transcripts of party leadership meetings that, if genuine, show that it routinely manipulated the justice system and the media. It sold itself to voters in this election as the party most trusted by the EU. But the transcripts, and the disputed vote, may put that trust in doubt.

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The French Socialists and Europe

A constitutional oui

Dec 2nd 2004 | PARIS
From The Economist print edition

Members of the Socialist Party vote for the EU constitution

AFP

Get article background

Hollande (left) outsmarts Fabius

IT WAS a vote that could have cost the leader his job, and split the party in two. In the event the decision by the members of France's Socialist Party to back the European Union constitution, by a convincing 59-41%, according to provisional results, has left the party's uncharismatic boss, François Hollande, stronger than ever. He is not the only one to breathe a sigh of relief. President Jacques Chirac now stands a much better chance of getting the favourable result he seeks in France's referendum on the EU constitution next year.

Mr Hollande had called the party's first-ever internal vote after his number two, Laurent Fabius, led a breakaway camp against the constitution. Officially, and to the bafflement of fellow European Socialists and British Conservatives alike, Mr Fabius believed that the text was too liberal economically and not social enough, and did too little to integrate Europe in areas such as tax harmonisation. It was time to return to the idea of a core Europe, he argued, and start again.

Unofficially, though, Mr Fabius's position was tactical. By the standards of the French left, he is a pro-European moderate, who voted for the 1992 Maastricht treaty on monetary union and was prime minister when France signed the Single European Act in 1986. Yet he detected a restless Euroscepticism on the left, prompted by fears of *délocalisation*—a loss of jobs to low-cost new EU members—and a sense that the Union of 25 was not working quite as the founding French intended. The 2002 presidential election, in which the Socialist candidate, Lionel Jospin, was evicted in the first round by the National Front's Jean-Marie Le Pen, had also exposed the perils of losing touch with popular leftish sentiment. In short, although this put him in an unholy alliance with harder-left elements, Mr Fabius was ready to gamble on a rejection. “To call it opportunism would be unkind,” comments a rival senior Socialist. “I would call it desperation.”

Both Mr Hollande and Mr Fabius insisted before the poll that this was not a personal vote of confidence. Mr Fabius said that “the leadership of the Socialist Party was not at stake”, so he would not resign as deputy leader. But his position has been weakened. Before his gamble, Mr Fabius was already losing ground. Despite an effort a year ago to spice up his image, his popularity rating is low (43%, according to Ifop, a pollster), compared with that of Mr Hollande (48%), and way behind those of popular heroes such as Bernard Kouchner (73%) or Jack Lang (67%). He has been overshadowed by Mr Hollande's steady ascent. Now he has been sidelined.

For his part, Mr Hollande has staved off a crisis in the party, and shored up his personal credibility. Just a year ago, he was regarded warily as a caretaker leader, lacking both force and personality. But he has since led the Socialists to sweeping victories at regional and European polls, as well as winning this week's referendum. A parade of Socialist heavyweights, from Jacques Delors to Mr Jospin, marched out to help him ahead of the ballot. For the first time, he looks a credible leader. But the weakening of Mr Fabius still gives a new twist to the left's favourite parlour game: who will be its 2007 presidential candidate? For example, Dominique Strauss-Kahn, a pro-European rival to Mr Hollande, who was marginalised by the Hollande-Fabius duel, is now back in play.

The conflict over the EU constitution has been bruising. “There has been a lot of anger inside the party against Fabius,” says one insider. The Socialists badly need to unite, and to devise a programme for 2007. After Mr Hollande's victory, this is more likely to have a moderate flavour, which appeals to the centre, rather than leaning further to the left. The party would still find itself well to the left of Tony Blair's Labour Party, though: for instance, Mr Hollande defends the 35-hour week.

There is reassurance in this result for Mr Chirac too. Had the Socialists voted no, next year's referendum would have been extremely uncertain. The left is ahead of the ruling centre-right in the polls. And the French are hostile to Turkey's entry into the EU, a subject that has been hard to dissociate from the constitution. Indeed, Mr Chirac might have postponed the vote until late next year. With the Socialists now on board, he may instead bring it forward, possibly to next May. According to TNS Sofres, another pollster, 68% of the electorate supports the constitution.

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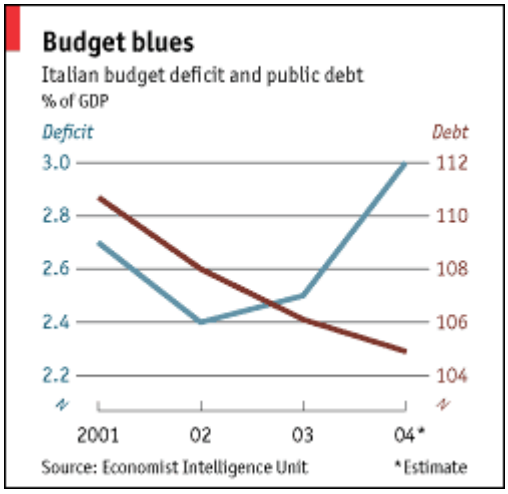
Italy

Tax and spend

Dec 2nd 2004 | ROME
From The Economist print edition

More public-finance woes for Silvio Berlusconi

IT WAS more of a general grouch than a general strike. On November 30th, millions of Italians stayed away from work for between four and eight hours, disrupting communications and transport, and crippling Italy's output. Why?



The latest of five nationwide stoppages since Silvio Berlusconi took power at the head of a centre-right coalition in 2001 was originally intended as a protest over spending cuts in next year's budget. This aims for €24 billion ($32 billion) of savings, to ensure that Italy keeps within the budget-deficit ceiling of 3% of GDP demanded by the euro area's stability and growth pact. But three days before the strike, Mr Berlusconi arm-twisted his ministers into agreeing that the 2005 budget should also include tax cuts worth €6.5 billion. He threatened to resign as prime minister if he did not get his way.

The threat worked, but his victory created a problem for the organisers of the one-day strike. Some trade unionists promptly said that they were striking against the inequity of the tax cuts, which gave more to the rich than the poor. But this is true only in absolute terms: workers will still get proportionately more tax relief than bosses. Other labour leaders said they were striking because the budget did not do enough for the south. Yet the funds for Italy's *Mezzogiorno* were among the few to be left untouched by the proposed spending cuts.

The former president of the European Commission, Romano Prodi, returning as unofficial leader of the centre-left opposition, got closer than anybody to the true reason for the protest when he said it was to complain about the “disastrous situation” of the economy. Figures published by the OECD this week forecast that Italy's growth rate this year would once again be one of the lowest in the European Union. Not disastrous, perhaps, but certainly demoralising—and largely the result of the Berlusconi government's timidity over introducing the root-and-branch structural reforms that Italy so badly needs.

However, as the OECD also argued, although there are things wrong with next year's budget, the tax cuts are not among them. Puny they may be—the average taxpayer will be able to spend about one extra euro a day—but they at least represent an attempt by Mr Berlusconi to begin to apply the liberal economics that he was elected for. Even if the tax cuts fail to stimulate consumer demand, they could force the government to rationalise Italy's notoriously wasteful public sector.

The real dangers are either that the savings needed to cover the tax cuts will not be forthcoming or that they will be made in the wrong places. The budget assumes GDP growth next year of 2.1%. That now looks optimistic. Mr Prodi predicts that there will have to be a corrective mini-budget next year. He may well be proved right. In the meantime, there is a risk that the Berlusconi government's knife could follow the line of least resistance, avoiding any cuts that would hurt the powerful vested interests that seek to block any attempt at reform in Italy.

Take the country's schools. The education minister, Letizia Moratti, who like Mr Berlusconi threatened to resign, aborted the original plan, which was to force schools to take the brunt of the savings needed to finance tax cuts. Now there is to be no reduction in the overall number of Italy's strongly unionised teachers. But a proposal to deploy an extra 70,000 staff, purely to teach English in primary schools, is being watered down. Some 28% of Italians speak the world's *lingua franca*, a figure that the government

thinks is too low. In an effort to remedy this, Ms Moratti is making English compulsory in primary schools. Yet the teachers who were supposed to take these classes are now to be saddled with additional general duties. That is hardly the way to help Italy compete better in an integrating world.

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The Greek and Roman churches

Two cheers, two saints

Dec 2nd 2004
From The Economist print edition

Argument about a gesture from west to east

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AFP

Bones of contention

WHEN Pope John Paul II visited Greece three years ago, letters to Greek newspapers were full of smouldering indignation about his indecent haste. Did this self-invited guest not realise that less than 800 years had passed since the sack of Constantinople in 1204? In that year an army of western Christians desecrated the Christian east's holiest cathedral and imposed their rule over the Byzantine Greeks.

In the Orthodox world, such sentiments are not confined to history buffs. They reflect a deeper sense of being abandoned by a western Christendom that treated its eastern brethren as a useful buffer against Islam but secretly despised them. Such grievances are still a factor in modern European politics, from Ukraine to Bosnia.

If any pair of prelates could heal the psychological chasm between eastern and western Christians, it ought to be their present leaders: a Slavic, mystically inclined pope and an Orthodox patriarch who studied in Italy and speaks fluent Italian (as well as six other languages). On the face of things, a huge step forward came last weekend when the bones of two of the three most important theologians of the early Greek Church—kept in Rome for at least 800 years—were handed over by the pope to Bartholomew I, the Orthodox patriarch, who promptly took them back to his home city of Istanbul. Their arrival was greeted with great rejoicing by Istanbul's small (and dwindling) band of Orthodox faithful. They have had more than their fair share of problems recently, including protest marches and minor bomb attacks by Turkish nationalists, and the usual bureaucratic hassles from the Turkish authorities.

But the healing of historic wounds is never a simple business, and the handover was overshadowed by a messy misunderstanding over what exactly was happening. To the Orthodox, the pope was making a welcome act of atonement for the misdeeds of 1204 by handing over the bones of two eastern saints that were removed by marauding western Christians. But a Vatican spokesman denied that there was any act of atonement, and insisted that the bones of one saint had been transferred to Rome before 1204. It may not take another thousand years to bring eastern and western Christians together, but it will take more than a weekend.

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Charlemagne

Another faraway country

Dec 2nd 2004
From The Economist print edition

Brussels faces up gloomily to the prospect of further eastward enlargement

Get article background

WHO can fail to be moved by the sight of young people braving freezing weather to demonstrate for freedom and democracy? Certainly not the soft-hearted internationalists who tend to be found in the offices of the European Union in Brussels. But the admiration and excitement generated in Brussels by events in Ukraine are tempered by a certain dread. The official policy has been that Ukraine is not a serious candidate for membership of the EU. Romano Prodi, who has just stepped down as head of the European Commission, once said that Ukraine was about as plausible a candidate for EU membership as New Zealand. Earlier this year the EU underlined this, by launching a new "neighbourhood policy" that unflatteringly lumped Ukraine in with such countries as Morocco and Syria. But Ukraine's fate can no longer be brushed aside. The demonstrators in Kiev's Independence Square want their country aligned with Europe not Russia—and alignment with Europe means, these days, aspiring to membership of the EU.

Why does this thought arouse such alarm in Brussels? The EU's enlargement to include ten new member countries, which took place last May, was sold as a golden opportunity to expand a European zone of peace, prosperity and co-operation into the former Soviet block. The same arguments could be applied even more strongly to Ukraine. The EU proclaims itself a "union of values"; here is another European country struggling to embrace liberal democracy. Moreover, if the EU is serious about turning itself into a superpower, the voluntary adherence of a big new country should surely be welcomed. In territorial terms, Ukraine would be larger than any of the present members, and it would rank fifth by population.

Hesitation about the reaction in Moscow to absorbing such a large chunk of the former Soviet empire only partly explains the reticence in Brussels towards Ukrainian aspirations to "join Europe". Far more important is the onset of enlargement fatigue. After admitting ten new countries, most of them considerably poorer than the existing members, Eurocrats are now contemplating without much pleasure the prospect that Romania and Bulgaria will join in 2007. This despite the considerable doubts that exist about the quality of Romanian democracy, to say nothing of corruption and a creaky judicial system. At the next EU summit, there will be a painful debate that seems sure to lead to a controversial decision to open membership negotiations with Turkey. All the Balkan countries, including such troubled places as Albania and Bosnia, have been promised that they too can aspire to eventual EU membership. Many politicians from richer and more stable western European countries have argued for setting a limit to the number of poor, developing democracies they take on. And that limit, the Brussels authorities had previously decided, would be the Polish-Ukrainian border.

Even the prospect of Turkish membership poses a threat to many EU policies and power structures that have been carefully built up over 50 years. Add Ukraine to the mix, and the EU of today would become unrecognisable, and probably unsustainable. The common agricultural policy, which still accounts for over 40% of EU spending, is already strained by enlargement; adding the vast grainfields of Ukraine would ensure its bankruptcy. The CAP is an historical relic that deserves to be scrapped. But there is a fear that other, more valuable achievements may also come under threat. There is already discussion in Brussels about permitting permanent limits to the free movement of people within the EU, to assuage western European fears of Turkey. Such talk will become louder if Ukrainian membership becomes a real prospect. The single currency would become a lot harder to manage if it included countries as diverse (and poor) as Ukraine and Turkey. And there are questions of raw power. The EU makes around 50% of the new laws of its member states, and big western European powers such as Germany, France and Britain are used to dominating proceedings. They could be more easily outnumbered in a club that might, once it decided to admit Ukraine, stretch to almost 40 members.

Farewell, ever closer union

It is not just the current structures of the EU that are threatened by further enlargement. So is the dream of the Union's founding fathers of creating an “ever closer union”, culminating in something like a single European state. Much progress has already been made towards this goal. The EU has a supreme court, a parliament, some military capacity and 80,000 pages of law covering everything from the environment to safety at work. But for true believers, the journey will not be complete until there is a Europe-wide welfare state, featuring harmonised taxes and common social legislation. Such a dream (or nightmare) already seems remote given the diversity of the 25 countries that are now members of the EU—and the refusal of the poorer countries to be saddled with the expensive burdens of Franco-German welfarism. But the idea of a tightly regulated European superstate would surely be delivered the *coup de grace* by the admission of Ukraine and Turkey.

It is understandable that believers in the old European federalist dream should be reluctant to see it disrupted by quarrels in a faraway country between people of whom they know nothing. But enlightened self-interest, as well as principle, dictates that they cannot ignore what is going on in Ukraine. The goal of the founding fathers of the European project was above all the establishment of peace on the European continent. Another war between France and Germany is now unthinkable. But the first world war started in the Balkans and the second with the invasion of Poland. Ensuring that these regions are safely incorporated into a liberal, democratic club may be thought a higher task than trying to guarantee that all Europeans enjoy the dubious delights of CAP subsidies and directives on working time.

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Correction: the Turkish army

Dec 2nd 2004
From The Economist print edition

In last week's story on the Turkish army, we confused two generals. General Yasar Buyukanit, not General Ilker Basbug, is the land forces commander who is poised to succeed General Hilmi Ozkok. Sorry. This error was corrected online.

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Education

Behave, or else

Dec 2nd 2004
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The state used to neglect badly behaved children. Now it gives them drugs and substitute parenting

TROUBLESOME pupils can ruin a class or a school. But dealing with them is time-consuming, expensive and therefore often neglected. That was mostly what happened in the 1980s and 1990s. Teachers, in protest at the way their pay was slipping compared with that of other professions, gave up the bits of their job, such as pastoral care, that lay outside the classroom. At the same time, youth psychiatric services were cut. The standard solution was to expel badly behaved pupils. As a result, they usually ended up at the worst and weakest schools in the locality—or without any schooling at all.

Whether or not behaviour has deteriorated since then, worries about it have sharpened. Bad behaviour is cited as one of the main reasons why teachers leave the profession—particularly the well-qualified new intake that the government is so proud of. Parents are increasingly intolerant of anything at school that may dent their child's exam results. That makes proposals to shunt problem children away from the good schools favoured by the middle-classes popular—hence the plan the Conservatives announced this week to send troublesome children to specialised schools run by private companies.

But things may slowly be getting better thanks to two important new developments. The first is the growth in the use of drugs such as Ritalin and its updated versions. Prescriptions for children of this class of drugs rose from 400,000 in 2000 to over 700,000 in 2002; prescriptions of Ritalin alone rose 25% last year.

Ritalin is highly controversial. Sceptics maintain that the drug is a “chemical cosh”—doping children rather than curing their underlying problems. Its long-term effects on the brain are not yet known. Once parents start demanding prescriptions, it can be hard for doctors to say no. What undoubtedly benefits a small number of children with specific problems, such as hyperactivity, can all too easily become an instant, cheap cure-all for youngsters who may be misbehaving because they are bored, miserable, badly nourished or for any other reason.

Against that, supporters of Ritalin argue that it works and is cost-effective—the total bill for Ritalin in England and Wales last year was a mere £10m ($19m). Even though the rate at which it is prescribed in Britain has risen, it is still far lower than in America. Eric Taylor, a child psychiatrist at London's Maudsley Hospital, says that 0.3% of British children take Ritalin, compared with 6-7% in America. “We are under-treating, although quite possibly they are over-treating,” he says. Although he prefers using behavioural therapy where possible, he says, some children are so disturbed that pills are the only option, at least initially.

The second big change is that the state is getting more involved in parenting. Some bad behaviour is clearly linked to problems at home, and their effect on nutrition, attitudes to authority and the ability to do homework. Most big schools in tough areas now have behaviour support units staffed by professional psychologists, and may also have a police officer who pays regular visits.

The government is also trying to integrate social services, health care and education. That can mean supporting “chaotic” (the jargon term for feckless) parents through parenting classes, while at the same time giving their children extra support at school. Breakfast clubs and after-school activities also offer children a chance to escape from troubled home lives. Such schemes are at the heart of the government's new child care strategy which was unveiled this week.

Another change involves teacher training, which used to focus on educational theory but ignore practical techniques for keeping order in class. The new scheme for teacher training is largely based in schools,

rather than full-time courses.

Although attention is increasingly focused on the costs of bad behaviour, that in itself will not get good results. “Awareness of children's mental health has grown very sharply in the last ten years,” says Dinah Morley of Young Minds, a charity, “but money has only gone in since the late 1990s—and it takes seven years to train a psychiatrist.”

Is it working? The latest figures do show a small drop in the number of children being permanently excluded from school, which is encouraging, although it is unlikely to wow the voters. There are no quick fixes to bad behaviour. But there may be slow ones.

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About sponsorship

School meals

Eat up your greens

Dec 2nd 2004
From The Economist print edition

Can school meals be appetising, nutritious and profitable?

PUPILS, like soldiers, march on their stomachs. A well-nourished child is more likely to be a studious one. But food has been seen as a cost to be cut, rather than an ingredient of good schooling. That may now be changing: as the government worries about obesity—which is rising fast among children—and urges everyone to eat less salt, fat and sugar, and more fruit and vegetables, the paucity and unhealthiness of most school meals is striking. But cash constraints and rules on public-sector contracts make improvement hard.

Since cost-cutting began in the 1980s, quality has fallen along with food budgets. More and more children have chosen to bring packed lunches, spend their dinner money on fast food or skip lunch altogether. Now only half the pupils who could eat school meals do so. As numbers fall, the overheads become more burdensome and the pressure on ingredients greater. Of a typical £1.20-1.30 ($2.30-2.50) charged for a primary-school meal, labour costs account for 55p, equipment another 5p, administration charges up to 15p and profit 8p, according to Paul Kelly of Compass, a leading catering company. That leaves barely 40p for the ingredients. By contrast, a prison would spend 60p (per adult). The Dragon School in Oxford, a top junior school in the private sector, spends 75p per child and a hospital 90p.

The easiest way to get more children into the school dining room is to offer fast food, like chips and pizza—but that conflicts with improving nutrition. What is both tasty and good for you is likely to be more expensive. One way round that would be to cut labour costs—which is impossible thanks to a government directive which says that workers in privatised services must have the same terms and conditions as they would have enjoyed in the public sector.

All this is no fun for contractors, whose margins are being squeezed. Compass and another big firm, Rentokil Initial, a conglomerate with its roots in rodent control, have complained that they are finding the primary-school business unattractive. “We have decided not to go into that market,” says Mr Pollard of Avenance, an upmarket catering firm which mainly works for state hospitals and independent schools. “We cannot provide the right food to put on a child's plate for 42p. The government has made the effort with hospital food, but has yet do so with schools.”

Some local authorities are getting fed up too. Essex County Council has given its 600 schools direct charge of catering. That has been good news for some—chiefly large ones, or those able to form clusters in order to negotiate good deals. But it is bad news for small schools in remote areas, who benefited from a cross-subsidy under the old scheme. Around 75 of them have given up offering hot meals.

It is not just about money, says Neil Porter of the Local Authority Caterers' Association, who notes that school meals are only 15% of a child's annual food intake. It is unrealistic, he says, to think that they are the key to delivering better nutrition. “Children live in a processed-food culture with at least two generations of parents who cannot cook and are themselves unfamiliar with certain foods,” he says. “The vast majority of children will not eat in school what they do not recognise and do not eat outside of school.”

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Human rights

Yanukovich's friends

Dec 2nd 2004
From The Economist print edition

A human-rights group that defends dictators

DURING the cold war, the leafy streets of north Oxford were a hotbed of anti-communism. Dons had close links to dissident and émigré outfits and spent their holidays enjoying the frisson of semi-clandestine trips behind the Iron Curtain to help subvert the evil empire. Now, at the Oxford-based British Helsinki Human Rights Group (BHHRG), some veterans of that struggle are playing a rather different role: noisily defending a grim lot of east European politicians against the imperialism of western do-gooders.

At first sight it seems baffling. Characters such as Slobodan Milosevic of Serbia, Alexander Lukashenka of Belarus, and Viktor Yanukovich, the purported winner of the Ukrainian election, are so vilified in the west that it is hard to imagine they have any fans at all.

Yet that is, in effect, what members of the British Helsinki group are. The group sends observers to eastern Europe, usually to elections, who produce lengthy, annotated first-hand reports, with controversial (critics say bizarre) interpretations of events. They find plenty of evidence to back Russia's foreign-policy grievances, for example. In Ukraine, they found numerous violations by supporters of the western-backed Viktor Yushchenko, but no significant ones by the other side.

John Laughland, one of the three people who run the BHHRG, and a regular contributor to British newspapers and magazines, thinks that the money pumped into pro-western causes in eastern Europe in the name of supporting democracy is a “scandal”. The west's talk of democracy is riddled by double standards, he argues: when pro-western politicians win elections by dodgy methods, nobody cares; when pro-Russian ones use the same tricks, there are howls of protest.

Mr Laughland used to have more colleagues. In the early 1990s, sticking up for patriotic east European leaders against politically correct criticism from naïve human-rights outfits was bold, but not batty. But the group lost almost all its supporters when it threw its weight behind people like Mr Milosevic. Another leading member, Christine Stone, has also written approvingly of Zimbabwe's Robert Mugabe.

The common thread to the group's thinking is an intense dislike of liberal internationalism, whether of the European Union's kind, or the more muscular American/British variant. Mark Almond, the group's third member, argues that American interference in Ukrainian politics is funded by both George Soros and George Bush—which, in his view, is scandalous.

Big international human-rights outfits are certainly not beyond criticism for pomposity or partiality. And western policies in the post-communist world over the past 15 years are not unblemished. But the tiny Oxford outfit is finding it hard to gain credibility to match its stridency.

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Northern Ireland

The unlikeliest pairing ever

Dec 2nd 2004
From The Economist print edition

Northern Ireland's peace process is nearly back on track—really

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AFP

He'll be back

IMPROBABLE as it sounds, it looks as though a deal has been done which could lead to the Reverend Ian Paisley, the most extreme of unionist politicians, taking over the job of first minister in Northern Ireland, with Martin McGuinness, believed to be the former head of the IRA, as deputy first minister. The agreement is not quite finalised, but the British and Irish governments, which brokered it, are confident that it will be eventually.

Last week the 78-year-old Mr Paisley, nipping in and out of a series of meetings with Tony Blair, said that he would like to think people thought of him "as a man of peace". The shock this comment caused was somewhat tempered by an outburst in his hometown, Ballymena, when Mr Paisley said that the IRA must "wear sack-cloth and ashes publicly". Even so, it was pretty extraordinary coming from a man who for 40 years has thundered his contempt for compromise with nationalism.

The deal has been on the cards since elections last autumn, when Sinn Fein replaced the moderate SDLP as the biggest nationalist party and the DUP replaced the Ulster Unionists as the biggest unionist party. David Trimble, leader of the Ulster Unionists and first minister of the suspended assembly, had negotiated a power-sharing agreement with republicans and moderate nationalists in 1998. Mr Paisley vilified the agreement as a betrayal of unionism: his attacks helped undermine the devolved government.

Yet Mr Paisley has evidently come round to the view that there is no alternative to power-sharing—and also, perhaps, to the attractions of being first minister. He now seems prepared to share power with a representative of Sinn Fein. Mr McGuinness is the likeliest candidate.

Because there is nobody more extreme than himself, Mr Paisley has a freedom he denied a succession of others. His followers sound bemused but ready to follow his lead. His deputy, Peter Robinson, was the prime mover in working towards a deal but Mr Paisley took centre stage in the past few weeks of semi-public negotiation.

The sticking point has been the decommissioning of IRA weapons. The IRA failed three times to satisfy Mr Trimble that it was giving them up. But it is inactive these days. It was responsible for none of the four paramilitary murders in Northern Ireland this year. Its quiescence may have something to do with the political success of Sinn Fein, which has done well both sides of the border. Irish politics adds to the incentive to disarm: Sinn Fein could soon be part of a coalition government, but Bertie Ahern, the Irish prime minister, has said that he will not ally with it until the IRA decommissions. If things continue well for Sinn Fein it could soon be the only British party sitting in four parliaments: in Belfast, Dublin, London and Brussels.

Republicans may have seen Mr Trimble as too weak to deal with, for they now seem ready to provide Mr Paisley with a transparency they denied him: two clergymen may witness a photographed act of decommissioning supervised by the Canadian, General John de Chastelain. The photo will be publicised only when power-sharing resumes. The offer sounds bizarre, but it may well suffice. After all, both sides

know that decommissioning is more symbolic than real.

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About sponsorship

Murder

Capital crimes

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From The Economist print edition

Is London becoming more murderous? Not really

Get article background

GEORGE ORWELL'S gripe about the English murder was that it had been Americanised. Gone were the poisonings and complex psychological dramas that made newspapers so much fun to read in the early 20th century, he complained. By 1946, they had been replaced by casual killings and weak motives.

How the nation's idea of entertainment has changed. These days, a murder is most interesting when it is most American. The killing of John Monckton, a London financier, on November 29th was splashed across newspaper front pages partly because it appeared so senseless—a burglary gone wrong, a husband and wife stabbed. It seemed as though New York-style brutality had come to Chelsea.

In fact, isn't London more dangerous than New York, now that the latter has been cleaned up? “New Yorkers have their city back and we are losing ours,” complained a *Daily Telegraph* columnist. Earlier this year, both Steven Norris, the Conservative candidate for mayor of London, and the eventual victor, Ken Livingstone, pledged to emulate the New York miracle that cut murders by more than two-thirds during the 1990s. If the Americans can do it, they asked, why can't we?

There is an answer. Jerome Skolnick, a New York University criminologist, believes that every city has a “floor” for murders, determined mostly by concentrations of poverty and gun ownership. Get rid of the gangsters and jumpy muggers, and you are left with a residue of violent spouses and others who will kill one another come what may. New York's homicide rate has stuck at 550 to 600 for the past three years, suggesting that the floor has been reached.

London's floor seems to be 150 to 200 murders a year. Only twice in the past 14 years has the number been higher or lower. Last year there were 229 murders in the capital—not a large increase, but some of it involving the sort of crimes that hit the headlines. A very small rise in senseless killings makes London appear similar to New York in the bad old days. But the resemblance is superficial, both in terms of order and scale. Murder in the capital is still comparatively rare, and comparatively English.

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Housing market

The landlords are nervous

Dec 2nd 2004
From The Economist print edition

Investors have cut back their house purchases but they won't cut and run

THE *Economic Outlook* from the OECD on November 30th painted a rather gloomy picture for consumer spending next year. The downturn in the housing market, it said, would brake the growth in consumption from 3.0% this year to 1.8% in 2005—the smallest increase since 1995.

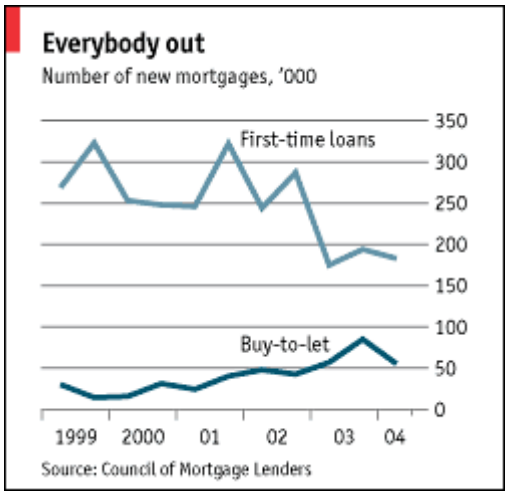
The forecast assumes that house prices will stabilise or fall moderately. However, the OECD gave warning that a more pronounced drop in house prices remains a risk, though one that might be lessening.

Conflicting figures this week on the housing market did little to resolve this uncertainty. The Nationwide building society reported that average house prices rose by 1.0% in November after three months when they had been broadly flat. However, the number of mortgage loans approved for house purchase fell in October to its lowest in almost five years, according to figures from the Bank of England.

One reason why the outlook for the housing market is so uncertain is the return of the small-scale private landlord. Individuals now own about 75% of rented properties, according to Capital Economics, a consultancy, up from 50% ten years ago. Many of the new landlords are financing their investments in property through “buy-to-let” loans. These have been growing fast. Five years ago, the stock of such loans was just 73,000. By mid 2004, it had jumped to 473,000.

That still represents only 4% of the total number of mortgage loans; and it includes some switching from commercial loans. But over the past couple of years, buy-to-let investors have clearly been an important source of new demand. The comeback of the private landlord has mattered all the more since it has coincided with an increasing scarcity of first-time buyers.

At the start of 2000, first-time buyers accounted for 49% of loans for house purchase. By the end of 2002, this share had fallen to 39%; since autumn 2003 it has stood at 28%. Buy-to-let investors, who have tended to purchase cheaper properties, have partially compensated for the disappearing first-time buyer (see chart). “They have been supporting the bottom end of the market,” says Milan Khatri, economist at the Royal Institution of Chartered Surveyors (RICS).



However, that support appears to have peaked in the second half of 2003. More recently, buy-to-let investors have pulled in their horns, contributing to the weakening in the housing market. The question now is whether the new breed of private landlords will intensify the downturn by dumping their properties.

This threat appears exaggerated. Most buy-to-let landlords are long-term investors, according to a Bank of England survey. A residential-lettings report by RICS published on December 3rd confirms that investment activity is much lower than a year ago. However, selling activity fell in the three months to October. Tenant demand has picked up and rents are rising at the fastest pace in three years.

The main threat to the housing market is that house prices remain over-valued, whether for first-time buyers, buy-to-let investors or owner-occupiers. This is why, although most people expect house prices to fall only moderately, there is still a substantial risk of a more severe downturn.

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Bookshops

Not dead yet

Dec 2nd 2004
From The Economist print edition

The internet was supposed to destroy off-line booksellers. It hasn't

INTERNET retailing is booming in Britain: from £19 billion in 2002, sales rose to £39.5 billion last year. This Christmas is expected to be the best one ever for online retailers. At the same time, supermarket sales of non-food items are growing. Those are two reasons why so many of the big British retailers have been doing so badly.

Bookshops look especially vulnerable. Supermarkets are piling the bestsellers high, and books are where Amazon, the internet's biggest retailer, started. Which makes it particularly odd that bookshops are, in fact, doing rather well.

Profits at Waterstone's, a big British bookseller, are up 11%. Six new branches opened last year; eight more are planned before April. It's a similar story at Ottakar's, a rival chain. Sales have risen by 4% and 12 new stores have opened this year.

There are two reasons for this unexpected good health. The first is that, faced with the threat from the internet and the supermarkets, management has had to improve. Supply chains have been streamlined and some of the more unworldly staff have been replaced with steely-eyed businessmen. Customers are lured in with special deals on bestsellers, which are used as hooks to sell tomes from publishers' back catalogues.

The second is to do with the limitations of the internet as a retail channel. Thanks to lower costs, internet firms can often undercut their high street rivals, but customers must wait at least a day for their goods to be delivered—often at inconvenient times. “Amazon is very good at distribution,” says Rob Mann, an analyst at HSBC. “But there's still the idea of instant gratification. On that front, internet retailers will always be at a disadvantage.” And while low prices attract customers who know exactly what they're looking for, browsers tend to prefer real shelves full of real books to a computer screen and a mouse. “A lot of people go into a bookshop not really knowing what they want,” says Mr Mann. “It's difficult to do that online.”

Smaller, independent booksellers, who lack buying power, have found it particularly hard to compete. Some have survived by emphasising their community ties by hosting arts festivals and reading clubs. Others have turned themselves into specialists, stocking lots of books on obscure topics.

The most ingenious have prospered by turning threats to their own advantage. Doug McClean runs Forest Books, an independent shop near Oxford that uses the internet to sell books on sign language and deaf culture all over the world. “We've had to move premises three times,” he says. “We've outgrown each one.” Many small traders, especially those dealing in rare or very old books, sell through internet sites like eBay. Even Amazon itself, the purported nemesis of the off-line book industry, allows small sellers to use its website to advertise their wares.

Some small bookshops use supermarkets to their advantage, too. They stock up at supermarkets, which sometimes sell bestsellers cheaper than wholesalers do.

One business from which the internet has taken market share is mail-order catalogues. A website provides a similar service, but faster and more responsively, says Steve Bohme of Book Marketing. Mail order firms' market share has decreased as online sales have risen.

“Everyone got the internet wrong when they assumed it would replace retail,” says James Heneage, the boss of Ottakar's. “It's simply a new channel.” That may be a comforting thought for other retailers as

Christmas approaches.

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Criminal justice

Raising the blindfold

Dec 2nd 2004
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Juries are to be told of prior convictions for certain types of crime

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IN THE civil law system in most of continental Europe, a defendant's criminal record is regularly read out in court. Juries in America, by contrast, may be informed of a defendant's prior convictions where this helps show “intent, knowledge and purpose” relating to the alleged crime; but once in court, using previous convictions, or any other evidence, to suggest a propensity to commit a particular type of offence is strictly prohibited. England and Wales, where juries are rarely trusted with any evidence relating to a defendant's past, are far closer to the American system. Judges complain that in as many as one case in four, this leads to wrongful acquittals.

At present the judge may—but does not have to—let the jury know of a defendant's record of repeatedly carrying out crimes in a “strikingly similar” way: attacking a particular kind of person with a particular weapon, for example. This is set to change if Parliament next week approves a measure allowing judges to inform a jury of a defendant's prior convictions or other character-related evidence when they are in the same “category” as the offence being tried. At first, this will apply only to theft and child sex offences—crimes where repeat offences are common. But the home secretary can add other categories later.

The police are delighted. Civil-rights groups and even some judges worry that it could lead to miscarriages of justice. “This is both hugely important and quite dangerous,” one crown court judge says: “For the first time, the prosecution will be able to ask leave for prior convictions to be disclosed simply if the defendant has a propensity to commit such acts. I believe it will enormously influence juries. I also think the Court of Appeal could be kept very busy as the law fails to make clear when the judge should use his discretion to disclose prior convictions. Some will use it one way, others in quite another.”

Originally not due to be implemented until next spring, the measure has been rushed forward. Judges, along with lawyers and court officials, are also unhappy about the lack of training on how to use the new measure. The Law Society is predicting “chaos”.

David Blunkett, the home secretary, says, “juries should be trusted with all the relevant evidence available to help them to reach proper and fair decisions”. No one would disagree—but lawyers will argue forever about what it means in practice.

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Pirate radio

Everybody loves a pirate

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How and why Ofcom is trying to legalise pirate radio

IT PLAYS the sort of new and innovative music that commercial radio usually avoids. Most of its output is “urban” (ie, black) music, which means diversity on the airwaves. But although it sounds like a public-service broadcaster, it's not a new BBC channel: it's pirate radio.

The best evidence of how pirate radio overlaps the BBC's remit is the corporation's new digital station, 1Xtra. It is so closely modelled on pirates that they complain about the competition. Now the government may be coming round to the view that pirate radio is a good thing. Enforcers from Ofcom, Britain's media regulator, have been cracking down on pirates all year, but that's partly in the hope of persuading them to go legal: the regulator is offering them cheap new “community radio” licenses.

Pirate radio stations don't buy licences, which is why they get into trouble with the regulator. Their signals can interfere with the emergency services and air-traffic control as well as commercial radio, though no serious harm has resulted.

Pirates are surprisingly professional. Like their legal counterparts, they have breakfast shows and strict rules against swearing on air. Most of the established stations would like to go legal if they could, says Nick Cage, manager of Dizzee Rascal, a popular rapper who started off on pirate radio. Indeed, many record companies already use the stations to get publicity for new albums and to look for new talent. “It's like everyone going to the recording studio and listening to the music before it goes through the mainstream channels,” says Mr Rascal.

But despite their professionalism, most pirate radio operators make little money. Instead, they play music because they love it. What little cash they do get comes from advertising from local businesses. Aspiring DJs are another source of income: they typically pay £10-£20 per slot. And stations are often used as shop windows for operators' own record labels and talents as DJs. But replacing a transmitter can cost £300, and Ofcom sometimes takes the new one away again within a week.

Their business models may not be compatible with the new licences: these cover a range of only 5 km or so, which is too small for most stations. 9nine3FM, a pirate in south London, broadcasts over a radius of about 30-40 miles, and says that it would lose advertising revenue if restricted to such a tiny range.

Many pirates will reject Ofcom's community-radio licence idea. For them, new technology may offer an alternative. Sales of digital radios are rising quickly. Pirates worry that they will not be able to broadcast illegally on digital radio for technical reasons and because it is more costly. On the other hand, if legal radio migrates to digital, that may leave space for the pirates on the old analogue airwaves. A nearer-term solution is the internet, though the pirates' audience often lacks broadband internet access at home. Some are already broadcasting on the internet in tandem with FM radio: 9nine3FM, for instance, started streaming on the web in January, and another, Lightning FM, based in Brixton, will start next year. But the internet may not have the cachet of the airwaves: after all, it's perfectly legal.

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Bagehot

The agony of David Blunkett

Dec 2nd 2004
From The Economist print edition

The events which may lead to the home secretary's downfall are the stuff of tragedy

THERE are two remarkable things about the David Blunkett business. First, the home secretary may well have achieved a first in being a senior politician determined to prove that he is the father of his mistress's child—a determination that has greatly contributed to landing him in hot water. Second, although people prefer not to mention it, his blindness is central to how the story has unfolded so far, and how it will play out in the days ahead.

When details of Mr Blunkett's three-year affair with Kimberley Quinn, the married publisher of the *Spectator* magazine, first surfaced in August, there was lots of interest, but not much censure. The home secretary was a single man (his first marriage ended in divorce 14 years ago) and he had hoped to marry Mrs Quinn until she decided to end the relationship. It was a private matter: end of story.

That changed when, a fortnight ago, Mr Blunkett let it be known through his lawyers that he was demanding that Mrs Quinn submit to DNA tests to prove that he was the father of both her two-year-old son and an unborn child with whom she is seven months pregnant. All he wanted, he maintained, was to be able to contribute financially to the children's upbringing and have some access to them. Some observers were happy to take Mr Blunkett at face value; others, suspecting baser motives, saw him as an obsessive bully who refused to accept his jilting. Wherever the truth lay, it triggered a reaction from Mrs Quinn that, had Mr Blunkett been thinking straight, he might have predicted.

Last weekend, a series of allegations, apparently emanating from Mrs Quinn, appeared in the *Sunday Telegraph*, which shares the same owner as the *Spectator*. They implied that Mr Blunkett had allowed his private and professional life to become dangerously blurred to the point of abusing his office. The most serious charge was that he “fast-tracked” a visa application for Mrs Quinn's Filipina nanny. Others, more trivial, included the accusation that Mr Blunkett had breached government rules by ferrying Mrs Quinn around in his ministerial car and that he had given her two rail tickets paid for by the taxpayer. More bizarrely, it was also claimed that he had improperly used two civil servants to put pressure on her to end her marriage.

The charge that he had bent immigration rules was potentially lethal, so Mr Blunkett swiftly set up an “independent” inquiry under Sir Alan Budd, a former senior Treasury economist, to investigate it. But even before Sir Alan could start work, the *Daily Mail* produced two letters sent from the Home Office to the nanny which suggested that something funny had been going on. In the first, pro-forma, letter she was advised that her application could take a year to process. In the second, more personal, letter, sent only 19 days later, she was informed that she was free to stay as long as she liked. While not quite a smoking gun, immigration experts agree that this speed was highly unusual. Mr Blunkett's explanation is that at precisely that time, the Home Office was making a new effort to process straightforward cases more promptly.

Blind ambition

Although people are understandably reluctant to admit it, Mr Blunkett's handicap explains a great deal about how he may have got himself into this mess. It also explains, in part, why his chances of surviving his former lover's vengeful attempts to destroy his career are, even after the latest revelations, still better than if he were an ordinary cabinet minister engulfed in scandal.

Born blind and poor, Mr Blunkett has depended on bull-headed obduracy and a refusal to accept life's reversals to get to where he has. In the process, he has also had to make more than the normal

sacrifices in terms of a lonely and unfulfilled personal life. Both ruthless obstinacy and desperation are evident in his clumsy attempt to use the courts to remain a part of Mrs Quinn's life.

Blindness has also played its part in the entangling of his private and professional lives. The private offices of ministers are there to help them in every way possible and relationships between ministers and the civil servants who staff them often become close. But Mr Blunkett's blindness means that he needs more than the usual amount of help to be effective, making it more difficult for both sides to see where the dividing line should be drawn. He admits to checking the visa application at the centre of the fuss to make sure that it had been completed properly. But to do so, he had to get an aide to read it. What happened subsequently is for Sir Alan to determine, but the fact that somebody from Mr Blunkett's office was involved increased the chances of the application receiving preferential treatment, even without any further intervention by the home secretary. Blindness may also have led to Mr Blunkett, never the most patient of men, having only a loose grasp of the voluminous rules governing ministerial conduct.

It would be crass to say that Mr Blunkett's blindness may also be what saves him. But the difficulties he has overcome have created a nagging suspicion, shared even by those who detest his authoritarian tendencies, that he is a great man. The near-universal admiration at Westminster (among both MPs and political reporters) for his achievement has meant that the baying pack usually found in pursuit of wounded ministers has been uncharacteristically muted. Even Michael Howard, the Tory leader, says that he hopes Mr Blunkett will be cleared.

That will help him in the difficult days ahead before Sir Alan reports. So too will his importance to a government short of the passion and the working-class authenticity that he brings to politics. But it is hard to escape the feeling that a tragedy is being played out. For once, to describe a political drama as Shakespearean is to give it no less than its due.

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MONITOR

Plugging in, at last

Dec 2nd 2004
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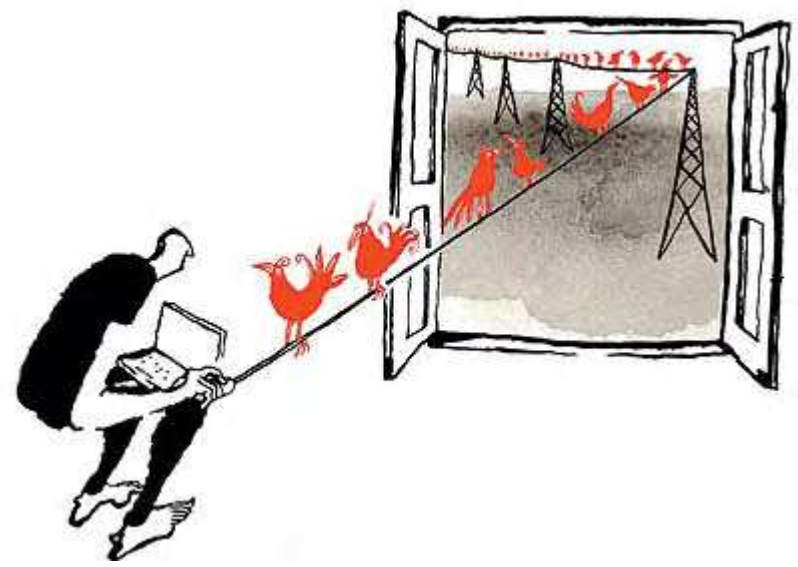

Communications: After years of delay, the provision of internet access over power lines is taking off—though not for the reasons you might expect

THIS is “a banner day...a historically significant day for communications,” declared Michael Powell in mid-October. The chairman of America's Federal Communications Commission (FCC) was enthusing about the prospects of a novel way for customers to receive ultra-fast broadband internet service in their homes: via the stodgy old power grid.

The idea of using the power grid as a communications network—known as “broadband over power lines” (BPL) in America and “power-line communications” (PLC) in Europe—has been around for ages, but is at last being implemented. Mr Powell made his comments at a meeting where the FCC gave its formal blessing to BPL. Crucially, the agency ruled that utilities that follow certain rules (chiefly concerning radio interference) would be given a wide berth to operate as “unlicensed” entities, unencumbered by America's baffling telecoms rules.

Why bother with BPL? The FCC is keen because it will bring into the broadband market a third group of competitors, after telephone firms, which use supercharged phone lines (digital subscriber lines, or DSL) to deliver broadband, and cable-TV operators, which use their cables for the same purpose. Another competing technology should lower prices. BPL may also further the FCC's goal of universal broadband service. The use of power lines means almost everyone in the rich world should be able to receive broadband service through this approach. That is not true for cable, which does not have universal coverage. Utilities are already eyeing new markets in rural areas.

William Berkman of Current Communications, a leading BPL operator, argues that the technology offers several advantages for customers, too. Connection speed is not dependent on the distance from a telephone exchange (as with DSL) or on the number of customers online at once (as with cable). BPL, unlike its rivals, offers uploads at the same speed as downloads. And, says Mr Berkman, it will ultimately offer far more capacity than today's cable networks. “This is a bet on bandwidth,” he says. “You want video and TiVo over the internet? You'll get it.”

Yet old hands remain sceptical, for BPL is hardly a new technology. Indeed, engineers tried to make it work for many years, but failed due to snags in the “last mile”: in particular, the final “step-down” power

transformer, at the point where the power from the grid enters a home or office, interfered with the flow of data.

But two new ways have been devised to solve this problem. One is to route around the step-down transformer using wireless technology. The transformer is often on a utility pole outside the customer's premises, so it need only be a short hop to a wireless receiver indoors. The other approach routes the data signal around the transformer and then feeds it back into the domestic electricity supply. A special modem plugged into an electrical outlet then deciphers the signal. This approach also allows domestic electrical wiring to double as a home network.

Despite these steps forward, several problems may yet derail BPL. One is security. Some worry that it may be too easy to pilfer your neighbour's e-mails by intercepting the signal from the wireless transmitter sitting on the pole between your houses. But early field trials—and there have been several dozen such trials, in America, Canada and Europe—suggest that this worry is misplaced. The most advanced trial is taking place in Cincinnati, Ohio, where some 15,000 customers now receive BPL on commercial terms.

Jim Rogers, the boss of Cinergy, the trail-blazing local utility, points to the second potential snag facing BPL: the stodginess of utilities. Traditionally, the sector has not been very innovative, but in this case caution might be justified. Mr Rogers notes that risky broadband investments would need to be made today out of unregulated profits—but with no guarantee that regulators would not claw back BPL profits tomorrow as “regulated” earnings.

Another concern is radio interference. Ham-radio operators have complained vociferously that BPL signals are “bleeding” from power lines and spoiling their hobby. The emergency services use some frequencies that may be affected too. So the FCC's October ruling establishes “excluded frequency bands” for aeronautical communications and public safety. Firms that manufacture BPL gear must “notch out” emissions within those bands, and win pre-certification from the FCC for their equipment. The regulators also created a database for tracking reports of alleged BPL interference. Even so, the ham-radio operators were not satisfied. Yet they claim that the technology will fail to take off anyway. Their trade association claims that other broadband technologies, such as Wi-Fi and new fibre-optics networks, will “leave BPL in the footnotes of technology along with the eight-track tape player.”

Perhaps. But there is reason to believe that BPL might finally start to live up to its potential, thanks to an unexpected ace in the hole that DSL and cable do not have: the big blackouts that hit North America, London and Italy last summer. Those fiascos were the result not of a shortage of generating capacity, but rather of the failings of an antiquated grid. Today's electrical system is a creaking relic lacking the sophisticated command-and-control tools necessary to ensure reliability. As last summer's outage in America showed, local operators often do not know when or where power has gone out on their system.

BPL could change all of that. A beautiful side benefit of the technology is that data-enabling their power networks will let utilities monitor what is happening on their power grids in real time, down to local substations. The technology could also allow them to read power and water meters without entering customers' premises. Mr Rogers of Cinergy notes that it might also allow utilities to manage peak loads by, for example, turning down your residential air conditioner remotely while you are at the office, in return for a lower tariff.

“The reliability aspects are unbelievable!” gushed Nora Brownell in October as she toured a utility in Virginia that has implemented BPL. Her view matters, for she is a commissioner on the Federal Energy Regulatory Commission (FERC), the country's top regulator of power utilities. In a telling and unorthodox show of support for the new technology, the FERC's commissioners turned up at the FCC meeting at which BPL was given the green light. Pat Wood, the FERC's boss, even offered this forecast: “It's my hope that a year from now boards of directors and shareholders and customers are all asking utilities, ‘Why aren't you in BPL?’”

It finally looks as though BPL's day has come. The happy collision of Mr Powell's desire for broadband competition and Mr Wood's dream of grid reliability is spurring on BPL technology. Revealingly, European

officials, who have in the past been cautious about PLC technology, applauded the FCC's decision in October: similar pan-European rules may be in the offing. The result could be better internet access for customers—and, just possibly, a step towards the intelligent, self-healing power grid of tomorrow.

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MONITOR

A grid by any other name

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Grid computing: It might be the next big thing in computing. But for now, grid computing's biggest problem is that nobody can agree what it is

WHEN is a grid not a grid? It depends whom you ask. According to many in the computer industry, grid computing—which roughly means the harnessing of the collective processing power of many computers in different places—is here today, and is already widespread. Yet according to others, grid computing, while promising, is still years away from becoming a reality. Who is right?

The problem is that “grid” has been co-opted as a buzzword and applied to a number of entirely different things. The term “grid computing” was originally coined by Ian Foster of America's Argonne National Laboratory in the late 1990s. He meant to draw an analogy between the supply of computing power and the supply of electricity, which is delivered along a wire, when you need it and with no need to worry about where it came from.

In 2002, Dr Foster drew up his own three-part definition of grid computing. A grid, he proposed, should co-ordinate computing resources that are not centrally controlled, rely on open standards, and provide more reliability than stand-alone machines. Alas for Dr Foster, his checklist immediately raised hackles within the computer industry, since much existing “grid computing” software fails to meet these criteria. Linking many small computers together to create a more powerful machine, for example, is not new, and is usually called clustering. For marketing purposes, however, some firms like to call it grid instead.

Similarly, grid is often confused—sometimes deliberately, for marketing reasons—with equally nebulous terms such as utility computing, on-demand computing, autonomic computing and data-centre virtualisation. Behind all this terminology is the idea of continuously and automatically adjusting the configuration of a corporate data-centre to meet the demands made on it. But Andrew Chien, a grid pioneer at the University of California at San Diego, notes that though useful, such approaches generally eschew the harder part of the grid vision, which requires automated sharing of computing resources between different organisations, not just within one firm.

A well-known example of the sharing of computing resources across the internet is SETI@home, in which over half a million people help to sift radio-telescope readings for evidence of extraterrestrial life using a glorified screensaver running on their PCs. Other similar projects, such as IBM's new World Community Grid, conduct medical research. But David Anderson, the director of SETI@home, rejects the grid label, preferring the term “public resource computing”. Others call it “internet computing” or “cycle scavenging”. While it is grid-like in some respects, this approach is very task-specific and is centrally controlled—so it is not truly grid.

Some firms, such as United Devices, sell proprietary software for cycle scavenging within a single company. Idle PCs can, for example, run drug-design software in a pharmaceuticals company or evaluate a derivatives portfolio for a financial-services firm. Early adopters of this technology claim impressive benefits. Yet since all the resources are controlled by a single organisation, purists argue that this is at best an “intragrid”, just as an intranet is a private, internal version of the internet.

What of those deliberately decentralised systems, peer-to-peer file-sharing networks? Some of them, at least, operate using open standards, and they are certainly robust: repeated attempts to close them down have failed (see article). But they do not count as grid computing either, since they are mostly storage and distribution systems, and do not perform general purpose data-processing.

Grid computing is not entirely fictional, however: scientists have been building grids on a national or even global scale for several years. A good example is the LHC Computing Grid, which links large clusters

and storage systems in 87 computer centres around the world, for the benefit of particle physicists. Another example is TeraGrid, an American effort to link nine large supercomputing centres for scientific use. Even within the academic arena, though, convergence towards common standards is slow, partly because each grid project tends to reinvent the wheel. To tackle this problem, the European Union launched a major initiative called EGEE this year to provide a common grid infrastructure for scientists; America has a similar initiative.

The hope is that such projects will provide the first glimpse of “the grid”, a single global computing grid that will do for data processing what the world wide web did for online publishing. Wolfgang Gentzsch, a former grid guru at Sun Microsystems who is now director of MCNC, North Carolina's statewide grid initiative, says the term “grid” really refers to this ultimate goal, towards which today's systems are merely stepping stones. But it would, he admits, be more accurate to refer to them as “grid-like” or using “grid technology”.

Constructing a single, global grid will mean solving difficult security, privacy and billing problems. Scientists have a tradition of sharing their results and resources, but others do not. Yet the hurdles are not so much technological as political, economic and terminological. The dream of a single grid, akin to the web in its simplicity and pervasiveness, still seems a long way off—as does agreement about what “grid” really means.

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MONITOR

Security through viral propagation

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Security technology: A new kind of door lock combines low-tech and high-tech approaches to enhancing security—but is it really safer?

IN THE security industry today, one part is decidedly sexier than the other. The sexy part deals with digital security, which includes everything from fighting computer viruses and fending off malicious hackers to controlling which employees have access to which systems. All of this has overshadowed the less glamorous part of the industry, which deals with physical security—in essence, door locks and that sort of thing. At parties, the digital guys come across as cutting-edge, whereas the door-lock guys soon have to admit that their last truly stunning innovation, the pin-tumbler lock, was devised in ancient Egypt but then got lost for 4,000 years until Linus Yale, an American inventor, rediscovered it. And even that was a century and a half ago.

Assa Abloy, a Swedish company that is the world's largest lockmaker, wants to change that. So it has teamed up with CoreStreet, a software company based in Cambridge, Massachusetts, to merge digital and physical security into a single system. The idea is that the same computer database that gives employees of a firm or government access privileges online also opens (or closes) doors for them. The twist, however, is that the doors need not have a permanent, hard-wired connection to the central computer.

Today, the only way to allow door locks to authenticate (“Are you who you claim to be?”) and validate (“Are you supposed to be entering at this hour?”) people in real time is to install electronic card-readers on doors, and then hook those readers up to a secure computer network. If an employee named Jane then gets fired, the central database will immediately inform all the connected card-readers, which will stop accepting Jane's key card.

The problem is that this sort of network is very expensive. An electronic lock costs between $3,000 and $5,000, 80% of which is the cost of network wiring, says Phil Libin of CoreStreet. Wiring up all the locks of, say, a nuclear power plant, university campus, airport, or military base therefore becomes extremely costly. Hard-wiring the doors of trucks, containers, aeroplanes and other moving things is out of the question. This is why, even in the most secure settings, at most 3% of locks tend to be connected.

CoreStreet's solution is “to make the cards themselves the network”, explains Mr Libin. There is still one

central access list that says who is allowed to open what, and it is regularly sent out to the 3% of locks that are connected. The cunning part is how the list is propagated to other, unconnected locks: by the users themselves. Whenever an employee swipes his card through a connected lock, the list is copied, in encrypted form, on to the card. As he then walks through unconnected doors, the card transfers the latest copy of the list on to their locks, replacing their older versions. These locks in turn pass the new list on to any other cards passing through, and so on.

As long as people keep moving through doors, says Mr Libin, the freshest list of privileges spreads by “viral propagation”. The trick is to position the few connected locks carefully, to ensure that updates to the list spread within minutes to all the other doors. That way, Jane, having been fired, will find that her card no longer works. The new “intelligent” locks from Assa Abloy and CoreStreet that do all this cost about $1,000 each.

Not everyone is convinced, however. Marc Tobias, an expert on locks who has literally written the book on the subject— all two volumes and 1,400 pages of it—has heard grand claims being made about new kinds of lock before. He has been picking locks since he was 15, though he has not yet picked one of the new Assa Abloy locks (which have so far been supplied to ten trial customers). But, he says, “I'd be really paranoid about this until it has been thoroughly vetted.” As Bruce Schneier, a security expert, likes to point out, security is like a chain, and is only as strong as its weakest link. The new system's security depends on protecting both the encrypted access list and the network that links up the connected doors. Making physical locks as secure as computer networks, in other words, means precisely that.

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MONITOR

The evolution of the photofit

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Security technology: A new type of computerised photofit system takes a novel evolutionary approach to generating images of suspects

Not the usual suspects

IF YOU have ever tried to describe someone's face in detail, you will understand why the “photofit” composite images used by the police look so dodgy. In recent years, computerised “E-Fit” systems have helped improve the accuracy of these images by allowing witnesses to choose from a wider range of facial features. But researchers at the University of Stirling in Scotland found that, despite these improvements, people still have a hard time constructing recognisable faces—especially if there is a delay of more than a few hours between seeing the face and generating the composite.

The problem is that people tend to recognise faces as whole entities, rather than as separate features. So picking from a range of eyes, noses and mouths is not necessarily the most suitable approach, says Charlie Frowd, a psychologist at the University of Stirling. Next year, however, British police are expected to begin trials of a new computerised system, called EvoFIT, developed by Dr Frowd and his colleague Peter Hancock. It uses an evolutionary approach, known as a genetic algorithm, to “evolve” faces rather than piece them together.

The process is entirely non-verbal and takes a fraction of the normal time, claims Dr Frowd. A witness is shown an array of 60 different faces with random features. Having studied them closely, the witness is asked to choose the six images that most closely resemble the person they are trying to describe. These six are then used to generate another set of 60, by switching features between some of the images and by making random changes to others. The witness is then asked to repeat the task, whereupon a new batch of faces is generated, and so on. In evolutionary terms, this process is known as “genetic crossover and mutation”, and is a powerful way to search a large number of possibilities for a particular solution. By allowing the user to steer the selection process, the program is able to generate a good likeness for the original face after just a few cycles.

In one of its early versions, EvoFIT was used by police in Northamptonshire who were trying to catch a violent attacker. The attacker was never caught, but the senior investigating officer, Superintendent Paul Spick, says the witness involved found the new software much quicker and easier to use than traditional E-Fit systems. It was also more accurate: the final image caused the witness visible distress when

displayed. A further important advantage of EvoFIT over traditional composites is that an image can be generated even if the witness can only provide a sketchy verbal description.

The researchers have since made a number of further improvements to their system and are now in the process of commercialising it in partnership with ABM, a British firm which supplies police forces with PROfit, one of the leading computerised composite systems. The images are more realistic, and the system can generate three-quarter angle views of the face, which are easier to distinguish than direct frontal views, says Dr Frowd.

His team has also found that by combining the images generated by different witnesses, or even from a single witness, it is possible to get an even better likeness. This could be particularly useful when multiple witnesses come forward and the police are unsure which of the images they produce is the most accurate. Another improvement has come from changing the image-selection process. In the latest version, witnesses are given a selection of face shapes to choose from before facial features are added. This makes it less likely that the correct facial features will be rejected simply because they are on the wrong-shaped face.

These modifications appear to make all the difference. In recent experiments, Dr Frowd and Dr Hancock compared EvoFIT with the computerised systems currently in use by asking volunteers to construct an image of a face two days after seeing it, and then showing the resulting image to people who were familiar with the person depicted. With traditional composites, the person was correctly identified about 4% of the time; the figure rose to 25% with EvoFIT images.

Next year ABM will perform in-house evaluations of the system and will then team up with police forces for further trials. Although things look promising so far, two things in particular need further testing, says Leslie Bowie, ABM's director of research. Do the EvoFIT images distract witnesses or contaminate their memories of the face they are trying to recall? And while EvoFIT has performed well in the calm conditions of the laboratory, how will it cope with real-life witnesses, who are often traumatised by their experiences? If it can address these two questions, EvoFIT could be the next step in the evolution of the photofit.

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MONITOR

The future of crowd control

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Security technology: Should a more high-tech approach to keeping the peace, using sounds, shocks and stinks, replace existing methods?

There's one—set for stun

WHEN faced with rowdy protesters, police forces have a number of tools at their disposal with which to disperse crowds and quell violence, including batons, shields, rubber bullets and water cannons. But these antiquated devices are crude and rely on brute force, which can lead to further violence and can, in some situations, prove lethal. A number of new crowd-control technologies take a different approach, employing sounds, shocks and stinks to disperse or incapacitate protesters. Such “non-lethal weapons” (NLWs) have been talked about for years, but they are now attracting much more interest, for a simple reason: Iraq.

Between 1997 and 2003, America's Joint Non-Lethal Weapons Programme, which co-ordinates the development of NLWs for the American military, had an annual budget of around $22m. In 2004, it was increased to $43.3m. The extra funding reflects the growing need, in Iraq in particular, for ways to control crowds while causing as little harm as possible.

There are several ways to do this. Earlier this year, American soldiers in Iraq were equipped with a Long Range Acoustic Device (LRAD) to use in western Iraq. It is a sort of mega-megaphone, able to blast sounds (such as crowd-dispersal instructions in Arabic) in a narrow beam and with great clarity at a deafening 150 decibels. The LRAD can also make a deafening screeching noise, like a fire alarm. This sound can incapacitate anyone within 300 metres by giving them an instant headache. According to Carl Gruenler of American Technology Corporation, the San Diego firm that makes the LRAD, “you definitely don't want to be there” within 100 metres of the noise. The device is intended to be used in short bursts at a distance of 300 metres, since longer exposures could lead to permanent hearing loss. It can also be used to flush people out of buildings, and has been deployed on American warships, to warn off small craft that come too close.

Where the LRADtargets hearing, a weapon that zaps the skin debilitates via the sense of touch. The United States Air Force has developed a microwave weapon, called “active denial technology”, that would incapacitate crowds in this way. Microwaves are a form of electromagnetic radiation, like visible light or radio waves. If strong enough, the radiation can penetrate clothing and cause water molecules just below the surface of the skin to vibrate. These vibrating molecules heat up and create a burning sensation, akin to touching a hot light bulb.

The microwaves are emitted in a tight beam that can be swept across a crowd or directed at specific individuals. Tests on volunteers, the air force claims, have shown no long-term effects other than tenderness caused by repeated exposure; of the $51m spent on developing the system so far, $9m has been devoted to evaluating its effect on victims. The system will be tested on the ground, mounted on Humvee armoured vehicles, during 2005, and the air force plans to award a $22m contract to develop technology to enable it to be used from the air.

Not all NLWs, however, depend on high technology. Taking a rather more old-fashioned approach is the “tactical maloderant ball”—a fancy name for what is really just a small, spherical stink bomb made by

Paraklese Technologies, a firm based in Indiana that supplies law-enforcement agencies. Made of sterilised (but unspecified) animal faeces encased in a thin, gelatinous shell, it is fired from a rifle similar to a paintball gun. On impact, it leaves a powerful stench on an individual that strongly offends anyone standing nearby. The idea, says Dan Fosnight of Paraklese, is to isolate individuals who are instigating violence in crowds, in order to keep those around them safe.

It is not only human-rights activists and conspiracy theorists who regard NLWs with suspicion. Without rigorous, peer-reviewed research into the effects of all of these devices on people, it is impossible to be sure that they are any safer than batons and rubber bullets. The term “non-lethal” is something of a misnomer, since weapons described as such do not have to pass any specific test to demonstrate their non-lethal nature, and nearly all NLWs can kill if used in a certain manner. Even America's Joint Non-Lethal Weapons Programmedefines NLWs as “weapons that are explicitly designed and primarily employed so as to incapacitate personnel...while minimising fatalities, permanent injury to personnel, and undesired damage to property.” Minimising fatalities is not the same as preventing them altogether.

Andrew Mazzara of the Institute for Non-Lethal Defence Technologies, a research centre at the University of Pennsylvania, is conducting a rigorous evaluation of NLWs. As well as evaluating the physical effects of NLWs and determining what training is needed by their users, his institute is examining what tactics work best in particular crowd-control situations. The researchers are already assessing several NLWs, including the LRAD. Indeed, it is only now, months after it was deployed in Iraq, that the LRAD is being scientifically scrutinised by a body other than the company that sells it. But at least the claims that have long been made about NLWs are at last being put to the test.

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MONITOR

Good vibrations

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Consumer electronics: A French firm has found a way to turn dumb surfaces, from walls to table-tops, into interfaces to electronic devices

IMAGINE being able to tap anywhere on a wall to turn the lights on and off, or to change radio stations in the dining room simply by knocking on the table. Or how about dialling a phone number in the shower by tapping numbers on the glass door? Many things are powered by electricity and controlled by computer chips, but they co-exist with other items that are nothing but dumb, inanimate objects. A French firm believes a marriage is in order, and has developed a way to make hard surfaces such as walls, windows and table-tops into controls for consumer electronics, computers, household appliances and lighting, among other things.

“Our goal is to extend interactivity to all objects, to make everything smart,” says Hubert Cospain of Sensitive Object, from the firm's temporary office in a complex of French university science labs on Paris's Left Bank, beside the building where Pierre and Marie Curie experimented with uranium. If his firm's invention can make the leap from laboratory to living room, it could integrate technology far more smoothly into the household environment—and even reduce the number of remote controls that are proliferating on sofas and coffee-tables.

The system, developed by Ros Kiri Ing of the University of Paris 7, works using sound. When a surface is hit, it vibrates, producing a characteristic combination of sound waves as unique as a fingerprint. Tap the surface again, an inch away, and a slightly different sound results. Two sensitive microphones pick up these sounds and turn them into electrical signals. Though the two sounds are indistinguishable to the human ear, they can be told apart using signal-processing software. Sensitive Object has patents both awarded and pending for this process, called “time reversal acoustics”. It is not affected by background noise, since the sensors pick up the sound waves that propagate through the surface when struck, not the ambient noise in the room.

Some fine-tuning is required, however: this correspondent's attempt to turn on the lights in a room by tapping a special area on the wall required a half-dozen hits before it worked. But if the technology can be made suitably robust, it could serve many purposes. Using sound waves to distinguish between taps in different places could be used, the firm believes, in fields from oceanography to health care. The technique is well suited to situations, such as on board a ship, where water and electricity need to be kept apart. It could also provide a virtual PC keyboard in an operating theatre which could be wiped clean like any other surface. Mr Cospain even sees it being used for control panels in cars and planes, instead of heavy, complex bundles of wires. Initially, the firm is focusing on light switches, “virtual keyboards”, and touch-enabling computer monitors, which the firm reckons it can do for around $10, or one-tenth of the price of existing technologies.

In September, the firm received €2m ($2.6m) from Sofinnova Partners, a French venture-capital fund, which it plans to use for further research and development, to secure patent protection, and to chase customers. Its plan is to license the technology to other firms who will incorporate it into their products. So when can we expect a pianist to perform using a blank surface as a substitute for the 88 keys of a piano? Today, the technology is only able to recognise two simultaneous taps, not enough for a basic three-note chord. “But,” concedes Mr Cospain, “we're not too far away.”

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MONITOR

Not quite out of this world

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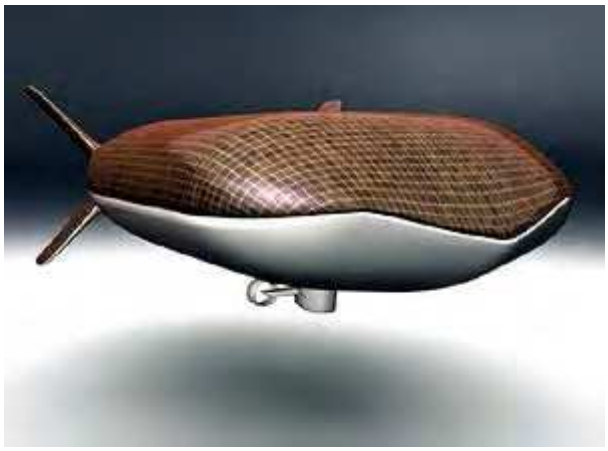
Telecommunications: After years of hype, a new, cheaper way to blanket cities with wireless coverage may finally be about to get off the ground



It's hardly rocket science

THE recent success of Burt Rutan's *SpaceShipOne*, the first private spacecraft, has brought commercial space travel a step closer. Virgin Galactic, Richard Branson's new space-tourism company, which has licensed Mr Rutan's technology, already has £800m ($1.5 billion)-worth of ticket reservations, though flights will not begin until 2007. But as the fledgling space-tourism industry lifts off, another more mature space business could be heading for a fall. The communications-satellite industry, arguably the only space industry that actually makes any money, may find itself usurped by an unlikely technology that is a lot more down to earth.

Next month Sanswire Networks, a company based in Atlanta, Georgia, is planning to launch the first airship satellite, or “stratellite”. Floating in the stratosphere at an altitude of about 20km (13 miles), the airship will behave just like a geostationary satellite, hovering over a particular spot and relaying radio signals to and from the ground. Such airships will, however, be much cheaper to launch and maintain than satellites—and can do things that satellites cannot.

Each 75-metre-long airship will be controlled autonomously, and will contain nearly 37,000 cubic metres of helium to keep it and its 1.4-tonne payload aloft, says Michael Molen, Sanswire's chief executive. At such high altitude, above the jet stream, the reduced air density means that the wind will be about 20 times weaker than at ground level, enabling the airship's solar-powered electric motors to keep it stationary with very little effort. The craft's aerodynamic shape not only reduces drag but also generates lift when facing into the wind, says Mr Molen.

Like satellites, these airships will be able to provide wide-area mobile-telephone coverage, paging and other communications services. The company is most excited by the prospect of being able to provide wireless broadband coverage, akin to Wi-Fi, over large areas. A single airship could, says Mr Molen, potentially provide coverage over an area of nearly 800,000 square kilometres, or about the size of Texas. It should thus be possible to create “hotzones” of coverage encapsulating entire cities and their surrounding countryside, rather than the smaller “hotspots” of Wi-Fi coverage found in airports and coffee shops.

Standard Wi-Fi technology is, however, intended only for short-range communications. Beaming signals to and from an airship requires a special antenna. But the stratellite could be used to provide a high-

speed connection to an access point for a home or office, which could then connect to nearby devices using Wi-Fi. The stratellite service would, in short, offer an alternative to cable and digital subscriber-line (DSL) broadband links. It would also be useful in countries with little or no network infrastructure, notes Ron Hochstetler, the chairman of the Airship Working Group at America's Federal Aviation Administration.

Airships are, he says, the only aviation technology that has not been fully exploited, which is why America's military is evaluating them for heavy-lifting and transport duties. They could have other military uses, too: in 2006, Lockheed Martin is due to position a prototype airship over the city of Akron, Ohio, once the centre of Goodyear's blimp operation, as part of an experimental missile-defence system. It will have communication and sensing capabilities, but no weaponry on board. It may seem low-tech compared with the armed satellites proposed in the 1980s by Ronald Reagan, but airships could do some of the work of satellites at much lower cost.

For even if you ignore the development costs of the rocket and the satellite itself, it still costs around $7,500 for every kilogram of satellite payload launched into low-earth orbit. For a typical satellite that means at least $40m. The satellite then typically has a lifetime of between five and seven years, after which it runs out of fuel and must be decommissioned and placed in a junk orbit, says James Northam, a senior engineer at Surrey Satellite Technology, a British satellite firm. Stratellites, on the other hand, will cost about $20m each, and can be reused, says Mr Molen: after hovering for 18 months they are recovered for servicing and then relaunched. It all sounds promising on paper—so the real question is whether Sanswire can make the idea fly.

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MONITOR

Human-powered health care

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From The Economist print edition

Medicine: With its new range of portable and robust wind-up medical devices, Freeplay aims to revolutionise health care in the developing world

TAKE a tour round the wards of a public hospital in sub-Saharan Africa and you will soon see that basic health care can be very basic indeed. Aside from rickety metal beds, heaving with life and death, there is scarcely any equipment to be seen. It is a far cry from the high-tech hospitals in the rich world, where patients are often connected to bleeping, flashing arrays of monitors, pumps and other devices.

Such equipment is rare in poor parts of the world, however, and not just because it is expensive. Electricity supplies in much of the developing world are erratic, if they exist at all, and battery packs to run medical equipment often find their way out of hospitals and into local markets. Moreover, most modern medical devices were not designed with the developing world in mind, so interpreting their complex displays requires trained staff—who are in short supply outside big cities in developing countries. Just as scarce are spare parts: broken equipment usually stays that way.

Freeplay Energy, a British-South African firm, plans to change all that. It is famous for its wind-up radios and mobile-phone chargers which are transforming the way people in poor places with little power communicate. Almost 300,000 Freeplay radios, distributed through development agencies, now bring news and vital information about HIV and other health matters to an estimated 6m people in developing countries. Because Freeplay's products need no batteries—expensive luxuries which tend to be jealously guarded by wage-earning men—women and girls now have access to a world of education and entertainment by radio.

Freeplay has now teamed up with a group of doctors at University College London to create medical equipment that works well in poor parts of the world. The project focuses on neonatal care, and with good reason. Infant death is still a fact of life in much of sub-Saharan Africa and South Asia; roughly 14% of babies born in Angola, for example, die before they reach their first birthday, more than 30 times the rate of infant mortality in Britain. The United Nations Millennium Development Goals set a target of reducing child mortality by two-thirds between 1990 and 2015. While much of that can be achieved through vaccines, clean water and better diet, there is a role for new technology as well. As Rory Stear, Freeplay's boss, points out, 95% of the world's neonatal medical technology is available to only 5% of infants—those born in the rich world.

Keep it simple

Engineers at Freeplay have redesigned four pieces of medical equipment, routinely used in developed countries, to better suit developing ones. The first is a pulse oximeter to measure levels of oxygen in the

blood, essential for babies with lung infections because it gives health-care workers early warning that their patients need extra oxygen (and oxygen tanks are one of the few bits of medical equipment available in poor clinics). Second is a syringe driver for delivering small amounts of fluid and drugs in tightly timed doses to babies with diarrhoea and other complaints.

A third device is a microcentrifuge—akin to a tiny, high-speed salad spinner—which takes small samples of blood and spins them at 4,000 revolutions per minute to separate the cells and fluid that make up blood. The colour of one component, called serum, can give doctors an indication of whether their patient is jaundiced, a tricky task in Africa where black babies do not simply turn yellow like white ones. The quantity of red blood cells in the sample can also point to anaemia, a common problem where nutrition is poor. The final lifesaver is a hand-held fetal heart monitor that uses ultrasound to keep tabs on how babies are doing in the womb, which is critical to the health of both mother and child.

All these devices get round the need for mains electricity or batteries by using a handcrank, foot pedal or solar panel to generate energy, which can then power the machines directly or be stored in internal batteries for future use. The machines' software and electronics have also been stripped down to bare essentials, not only to reduce power consumption but also to keep down the cost and size and make them more robust. Pulse oximeters in the rich world, for example, typically have complex LCD read-outs, while fetal heart monitors usually have to be wheeled around on trolleys. Freeplay's hand-held versions lack fancy features, making them smaller, lighter, cheaper and tougher.

Five prototypes of each device are now being tested in hospitals in South Africa. (Initially, they were used in well-equipped hospitals alongside traditional monitoring equipment, to demonstrate their accuracy and reliability.) The results are promising. The fetal heart monitor, for example, has proved as effective as fetal stethoscopes—a conventional way of monitoring fetal health—and patients prefer it because it is more comfortable.

Even so, there is room for improvement, based on feedback from the field. Some of the devices' displays will be changed to provide a continuous, rather than intermittent, read-out. And the microcentrifuge will be retooled to spin at even lower speeds, so that it consumes less energy. Once these improvements have been made, the next step will be to build a few dozen samples of each device and send them out across South Africa for six months of further testing in both urban and rural settings.

One challenge facing the new devices is winning the approval of regulators. The stringent requirements of America's Food and Drug Administration, for example, mean that it can take up to ten years for a medical device to make the journey from drawing board to hospital ward. The FDA's approval is not required in many poor countries, but it is required by some American funding bodies. Freeplay does not plan to seek FDA approval for its new devices just yet, though it has not ruled out doing so in future. While it is important to demonstrate that the new products are safe and reliable, users in the field are more immediately concerned with saving lives than worrying about red tape, says John Hutchinson, Freeplay's director of technology. In most cases, he says, users of the prototype devices did not want to give them back.

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MONITOR

Your cheating phone

Dec 2nd 2004
From The Economist print edition

Communications: Do mobile phones make it easier or more difficult to deceive people about your location, activities and intentions?

LIKE many technologies, the mobile phone makes possible new kinds of deception—and new ways to catch out the dishonest. Call someone from a mobile phone, for example, and you can pretend to be anywhere. But if someone calls you, the ringing tone they hear before you answer depends on which country you are in—and may reveal your location. Hong Kong businessmen, for example, once did not dare to leave their mobile phones switched on while visiting sleazy Macau, because the change in ringing tone could betray them. After the ringing tone for Macau was changed to sound like Hong Kong's, however, they could safely leave their phones on, and roaming revenues soared.

As mobile phones become more sophisticated, the possibilities for deception—and for exposing it—are increasing. The latest handsets have high-resolution cameras and satellite positioning, which can prove embarrassing to anyone who lies about their location and is then asked to produce a picture or a satellite fix to prove it. Nemesysco, an Israeli firm, has developed voice-stress analysis software that can, it claims, turn a mobile phone into a rudimentary lie detector. And new “third generation” (3G) mobile phones support video calling, though few people are using it so far.

Jakob Nielsen, a specialist in computer interfaces, worries that all this technology has made its users too accountable. “You don't want your phone to start squealing on you,” he says. “Sometimes you might want to take a call by the pool, or in your pyjamas.” He need not worry: there is a constant stream of new ways to facilitate phone-based deception.

For example, Liviu Tofan and Razvan Dragomirescu, the founders of Simeda, a German mobile-services firm, wondered whether “blue screen” technology from the television and movie industries, which is used to add fake backgrounds behind presenters and actors, could be applied to mobile video-telephony. Users could then appear to be at the office while lounging on the beach.

When this proved to be too technically difficult, the pair came up with an audio version of their idea instead, called SounderCover. It allows users of certain Nokia handsets to play pre-recorded bursts of traffic noise, airport announcements or other sounds in the background during a conversation. Specific sounds can be assigned to different people in the phone's address book, and triggered when they call. But despite its slogan—“Hide behind sound, make it your alibi”—Mr Tofan says most customers use SounderCover for fun. Many create their own sounds, such as a shoot-out or a love scene, to play tricks on their friends.

Mobile-phone deception is not limited to tricking people at the other end of the line. Two services offered by American operators, Cingular's Escape-A-Date and Virgin Mobile's Rescue Ring, allow customers to prearrange a call at a given time, to enable them to get out of a disastrous dinner date or boring meeting. With Cingular's service, for example, the phone rings and a recorded voice says: “Hey, this is your Escape-A-Date call. If you're looking for an excuse, I got it. Just repeat after me, and you'll be on your way. ‘Not again! Why does that always happen to you? All right, I'll be right there.' Now tell 'em that your room-mate got locked out, and you have to go let them in. Good luck!” (Never believe anyone who tries that excuse, then.)

Both fake background noises and fake emergency calls still require you to be a convincing liar, however. Some people find it difficult to lie in person. One survey, carried out by Freever, a mobile-services firm, found that 45% of Britons had lied about their whereabouts by text message, and 22% would rather text than phone when faking an illness. If you are bad at telling lies yourself, why not outsource the job to someone else?

That is the idea behind “alibi clubs”, in which a group of people agree to provide fake alibis for each other. For example, the “Alibi and Excuse Club” was set up last year at SMS.ac, a mobile-chat community. It has since attracted over 6,800 members, though this correspondent's request for someone to provide an excuse to help extend his copy deadline did not produce a response. But a spokesman for SMS.ac recounts several colourful stories told about the club: one member needed an excuse when a baseball game made him late for a party, for example, while another wanted to take a day off from work to go to the beach.

James Katz, a professor of communications at Rutgers University, says alibi clubs are a cute idea and may have some oddball uses, but will only ever appeal to a tiny minority. And even if the tall stories told about such clubs are to be believed—some of them, like the tale of a woman who supposedly broke off her engagement via an alibi club, sound suspiciously like urban legends—the problem remains that the lies told are only ever as convincing as the people who tell them.

Given the limitations of these various mobile-phone deception schemes, perhaps what is needed is a more professional approach: a fee-based service that uses trained actors to deliver plausible, pre-scripted and even personalised alibis. That would surely be more convincing than clunky technological tricks or networks of dubious strangers. No doubt an entrepreneur somewhere is already drawing up a business plan for a new firm: Alibis, Inc.

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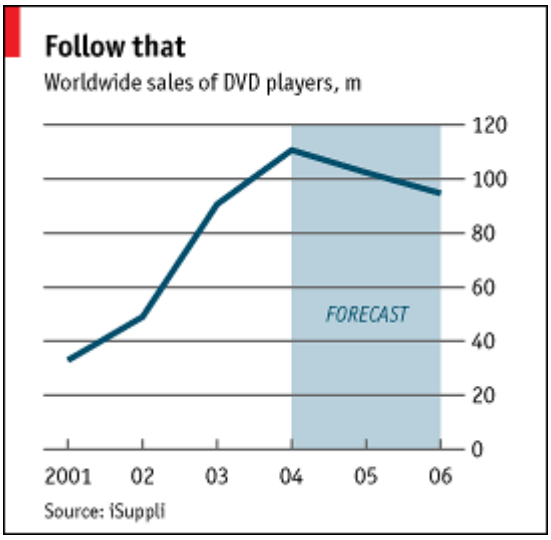
RATIONAL CONSUMER

Battle of the blue lasers

Dec 2nd 2004
From The Economist print edition

Consumer electronics: How previous standards wars compare with today's contest between HD-DVD and Blu-ray



ANOTHER year, another standards war in the consumer-electronics business. From the people who brought you the contest between VHS and Betamax in the 1970s comes a new saga in which two rival—and, inevitably, incompatible—formats struggle to establish themselves as the higher-capacity successor to the wildly popular DVD standard. Both new formats rely on blue lasers, which can discern finer details than the red lasers used in DVD players, to squeeze more data on to each disc. This capacity can be used in two ways: to boost quality, by providing a more detailed “high definition” picture, or to increase quantity, enabling more footage (at DVD quality) to fit on a single disc.

In one corner is the HD-DVD format, backed by Toshiba, NEC and Sanyo. The details are still sketchy—the specification will not be finalised until February—but HD-DVD will offer at least three times the storage capacity of DVD, while improved video-compression software will further boost capacity. The new format has the backing of the DVD Forum, which means it is the “official” successor to the DVD format. Proponents of HD-DVD claim the discs can be made cheaply using existing DVD production lines with very little modification. The first HD-DVD devices will go on sale next year.

In the other corner is Blu-ray, backed by a consortium that includes Sony, Matsushita, Hitachi and Philips. Blu-ray discs have around five times the capacity of DVDs, allowing each disc to store around two hours of high-definition video, or 13 hours of standard video. Sony has been selling Blu-ray recorders in Japan since 2003, and Matsushita and Sharp have both launched Blu-ray devices this year.

The battle between the two standards has heated up in recent months as the two camps fight to sign up hardware vendors and content producers, notably Hollywood studios, which have determined the outcome of previous standards wars. So how will the battle play out? Previous standards wars have been resolved in one of four different ways.

The first possibility is a compromise between the two rival formats, as happened in 1995 with the DVD standard. Originally, Sony and Philips proposed a technology called MMCD, while Toshiba and its allies pushed a rival standard called SD. After much wrangling, a standards war was averted when Hollywood demanded a single format. Sony compromised, and the result was the DVD, which is very similar to SD

but borrowed some elements from MMCD. This time, however, such a compromise seems unlikely, says Shyam Nagrani, an analyst at iSuppli, a market-research firm. “Nobody wants to bend,” he says, since neither side wants to give up the lucrative royalties it stands to make if its standard prevails. Instead, both sides are digging in for a long fight.

A second possible outcome is that the two standards will coexist, and dual-format players capable of handling both kinds of disc will render the standards war irrelevant—as happened in the tussle over recordable DVDs. The DVD Forum backed a recordable format called DVD-R, but several firms, including Sony and Philips, chose to back a rival format called DVD+R. Players capable of reading and writing both kinds of disc have, however, now largely rendered the disagreement moot. Vamsi Sistla, an analyst at ABI Research, believes the same could happen with HD-DVD and Blu-ray. Building a player that works with both kinds of disc will be difficult, he concedes, but consumer-electronics firms support multiple competing formats in other areas. Yet Mr Nagrani argues that in this case the two formats are so different that dual-format players would be far too expensive.

A third possibility is that the market will be stillborn: the lack of a common standard will deter consumers from upgrading, as happened with the two rival successors to the CD audio format, DVD-A (backed by the DVD Forum) and SACD (backed, inevitably, by Sony and Philips). Hybrid players can now play both kinds of disc, but neither format has taken off. Music and video are, however, very different. The popularity of the MP3 format suggests that most people are not too bothered about audio quality. In the case of video, however, there is a reason to upgrade. The new high-capacity discs will be able to hold an entire series of a sitcom, and there is bound to be demand for high-definition versions of popular movies such as “Lord of the Rings” and “Star Wars” that feature spectacular special effects. And as large televisions become more popular, says Mr Nagrani, people will demand higher image quality.

There can be only one

All of this suggests that the most likely outcome is a fight to the death, as happened with VHS and Betamax. Historically, Sony has often been in the losing camp, starting with Betamax. This time around, however, Sony has several factors in its favour. For one thing, Blu-ray is the more mature technology, and is already shipping. Second, Sony now owns two of the top ten Hollywood studios; its recent acquisition of MGM was widely assumed to be motivated in large part by a desire to bolster support for Blu-ray.

But the potential ace up Sony's sleeve is its next-generation games console, the PlayStation 3, which will use Blu-ray discs to store games and will double as a Blu-ray player. If Sony can launch the console next year, before HD-DVD devices become widely available, it may be able to establish critical mass for Blu-ray. Yet if the Hollywood studios come down firmly in favour of HD-DVD, that could relegate Blu-ray to obscurity. The next few months will be critical, and the battle could still go either way. “By late 2005 it will be very clear who the winner is going to be,” says Mr Nagrani. Technology may have moved on since the time of the VHS and Betamax contest—but unfortunately for consumers, standards wars persist.

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REPORTS

The rise of the green building

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Architecture: New buildings use design and technology to reduce environmental impact, cut costs and provide better places to work

IT IS officially known as the Swiss Re Tower, or 30 St Mary Axe. But Londoners universally refer to the newest addition to their skyline as “the Gherkin”, thanks to the 41-storey building's distinctive, curved profile, which actually looks more like a pine cone (see right). What is most remarkable about the building is not its name or its shape, however, but its energy-efficiency. Thanks to its artful design and some fancy technology, it is expected to consume up to 50% less energy than a comparable conventional office building.

Most people are not used to thinking of large buildings as vast, energy-guzzling machines. But that is what they are. In America, buildings account for 65% of electricity consumption, 36% of total energy use and 30% of greenhouse-gas emissions. So making buildings more energy-efficient could have a significant impact on energy policy, notes Rebecca Flora of the Green Building Alliance, a group that promotes sustainable architecture. That is a key goal of the “green architecture” movement, which is changing the way buildings are designed, built and run.

Proponents of green architecture argue that the approach has many benefits. In the case of a large office, for example, the combination of green design techniques and clever technology can not only reduce energy consumption and environmental impact, but also reduce running costs, create a more pleasant working environment, improve employees' health and productivity, reduce legal liability, and boost property values and rental returns.

The term “green architecture” only came into use in the 1990s, but the movement's roots can be traced back a long way. Crystal Palace in London and Milan's Galleria Vittorio Emanuele II, for example, built in 1851 and 1877 respectively, used roof ventilators and underground air-cooling chambers to regulate the indoor temperature. Today's enthusiasm for green architecture has its origins in the energy crisis of the 1970s, when architects began to question the wisdom of building enclosed glass-and-steel boxes that required massive heating and cooling systems. Early proponents of more energy-efficient architecture included William McDonough, Bruce Fowle and Robert Fox in America, Thomas Herzog in Germany, and Norman Foster and Richard Rogers in Britain.

These forward-thinking architects began to explore designs that focused on the long-term environmental impact of maintaining and operating a building, looking beyond the so-called “first costs” of getting it built in the first place. This approach has since been formalised in a number of assessment and rating systems, such as the BREEAM standard introduced in Britain in 1990, and the LEED (Leadership in Energy and Environmental Design) standards developed by the United States Green Building Council (USGBC) starting in 2000.

The LEED standards are intended to produce “the world's greenest and best buildings” by giving developers a straightforward checklist of criteria by which the greenness of a building can be judged. Points are awarded in various categories, from energy use (up to 17 points) to water-efficiency (up to five points) to indoor environment quality (up to 15 points); the total then determines the building's LEED rating. Extra points can be earned by installing particular features, such as renewable-energy

generators or carbon-dioxide monitoring systems. A building that achieves a score of 39 points earns a “gold” rating; 52 points earns a “platinum” rating. A gold-rated building is estimated to have reduced its environmental impact by 50% compared with an equivalent conventional building, and a platinum-rated building by over 70%.

Rating buildings in this way reveals how inefficient traditional buildings and building processes are. “We can sometimes waste up to 30 cents on the dollar,” says Phillip Bernstein, an architect and professor at Yale University. “It's not just the consumption of energy, it's the use of materials, the waste of water, the incredibly inefficient strategies we use for choosing the subsystems of our buildings. It's a scary thing.” In part, he says, this is because the construction industry is so fragmented. Designers, architects, engineers, developers and builders each make decisions that serve their own interests, but create huge inefficiencies overall.

Green is good

But things are now changing, as green architecture moves into the mainstream. In the spring of 2003, Toyota completed a 624,000-square-foot office complex in Torrance, California, that received a LEED gold rating, thanks to the inclusion of features such as solar cells to provide up to 20% of the building's energy needs. Also last year, Pittsburgh opened the doors on its 1.5m-square-foot convention centre, the largest building to be awarded a gold LEED rating so far. The USGBC says nearly 1,700 buildings in 50 states are now seeking LEED certification and 137 have been constructed and certified so far. And America's General Services Administration, which oversees all non-military government construction, recently decreed that all new projects and renovations must meet the minimum LEED standards.

In Britain, meanwhile, 70 office buildings constructed during 2003, representing 25% of the total by floor area, met the BREEAM standard. Similar standards have been adopted in New Zealand, Australia and Canada. In China, the Beijing Organising Committee of the Olympic Games aims to host the first zero-net-emissions games, which will include constructing all buildings and sports venues using green-architecture principles.

There are many ways to reduce a building's environmental impact. Consider the 48-storey Condé Nast Building at 4 Times Square in New York, for example, which was designed by Fox & Fowle Architects. It was one of the first examples in which green-architecture principles were applied to a large urban office building, and informed the drawing up of the LEED points system, since it uses almost every energy-saving technique imaginable.

“Going green saves money by reducing energy and maintenance costs, and may boost productivity.”

Special glass allows daylight in to reduce the need for interior lighting, keeps heat and ultraviolet rays out, and minimises heat loss in winter. Two natural-gas-powered fuel cells provide 400 kilowatts of power, enough to provide all the electricity needed at night, and 5% of the building's needs during the day. The hot-water exhaust produced by the fuel cells is used to help heat the building and provide hot water. The heating and cooling systems, located on the roof, are gas-powered rather than electric, which reduces energy losses associated with electrical power transmission. Photovoltaic panels on the building's exterior provide up to an additional 15 kilowatts of power. Inside the building, motion sensors control fans and switch off lights in seldom-occupied areas such as stairwells. Exit signs are illuminated by low-power light-emitting diodes. The result is that the building's energy consumption is 35-40% lower than that of a comparable conventional building.

30 St Mary Axe, designed by Foster and Partners, is also packed with energy-saving features. In particular, it uses natural lighting and ventilation wherever possible. The façade consists of two layers of glass (the outer one double-glazed) enclosing a ventilated cavity with computer-controlled blinds. A system of weather sensors on the outside of the building monitors the temperature, wind speed and level of sunlight, closing blinds and opening window panels as necessary. The building's shape maximises the use of natural daylight, reducing the need for artificial lighting and providing impressive long-distance views even from deep inside the building.

Clockwise from bottom left: Pittsburgh's convention centre, Toyota's building at Torrance, and New York's future Freedom Tower

The highest-profile green building currently on the drawing board is the Freedom Tower, which will be built on the site of the World Trade Centre in New York. The architects, Skidmore, Owings & Merrill and Studio Daniel Libeskind, have incorporated environmental design features throughout the huge complex. The main tower, which will rise 1,776 feet, will include solar panels and a wind farm, the turbines of which are expected to deliver around one megawatt of power, enough to provide up to 20% of the building's expected demand. Like other green buildings, it will rely on natural light and ventilation, and energy-efficient lighting.

High energy costs, environmental concerns and anxiety about the “sick building syndrome” associated with the sealed-box structures of the 1970s all helped to jump-start the green-architecture movement. But now economics is driving the shift towards greener design, as new materials and techniques fall in price, argues Michael Crosbie, an architect at Steven Winter Associates, a consultancy based in Norwalk, Connecticut. He says his clients “are much more demanding because they see the incredible amount of money it takes to get something constructed, and they want a return on that investment.”

Why it pays to be green

Going green saves money by reducing long-term energy costs: a survey of 99 green buildings in America found that on average, they use 30% less energy than comparable conventional buildings. So any additional building costs can be recovered quickly: according to the USGBC, the 2% increase in construction costs required to achieve a LEED gold rating typically pays for itself in lower running costs within two years. The traditional approach of trying to minimise construction costs, by contrast, can lead to higher energy bills and wasted materials.

Energy-saving techniques need not all be as exotic as installing coated glass, computer-controlled blinds or photovoltaic cells. Mr Crosbie says builders are now insulating buildings more effectively, in some cases using materials such as recycled paper and fabrics, including old, shredded jeans. It is more effective than traditional insulation, he says, saves money and is easier on the environment.

Green buildings can also have less obvious economic benefits. The use of natural daylight in office buildings, for example, as well as reducing energy costs, also seems to make workers more productive. Studies conducted by Rachel and Stephen Kaplan, environmental psychologists at the University of Michigan, found that employees with views of a natural landscape report greater job satisfaction, less stress and fewer illnesses. Lockheed Martin, an aerospace firm, found that absenteeism fell by 15% after it moved 2,500 employees into a new green building in Sunnyvale, California. The increase in productivity paid for the building's higher construction costs within a year.

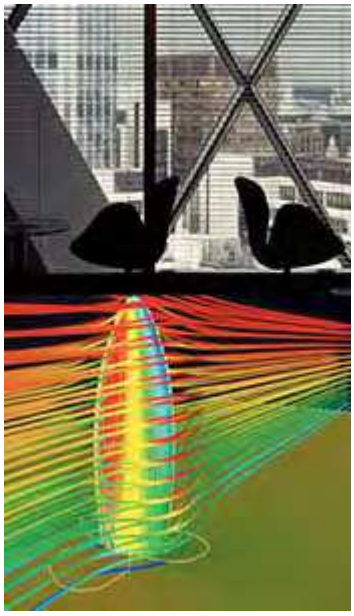
Similarly, the use of daylight in shopping complexes appears to increase sales. The Heschong Mahone Group, a California-based consultancy that specialises in energy-efficient building technologies, found

that sales were as much as 40% higher in stores lit with skylights. It also found that students in naturally lit classrooms performed up to 20% better. Green buildings can also reduce legal liabilities for their owners, since they are less likely to give rise to “sick building” lawsuits. But more studies are needed, says Caren Glotfelty, director of the environmental programme at the Heinz Endowments, a non-profit foundation run by Teresa Heinz Kerry that funds sustainable initiatives.

Despite its benefits and its growing popularity, green architecture is still the exception, not the rule, however. The main problem is co-ordination, says Mr Bernstein, who is also vice-president of the building solutions division at Autodesk, a software company. Green buildings require much more planning by architects, engineers, builders and developers than traditional buildings. “The building industry is very disaggregated,” he says, “so adoption patterns are really, really slow.” But new software is now improving planning by simulating how a building will perform before it is built.

Autodesk's software can create a three-dimensional model of a building and then work out how much energy it will use, taking into account its shape, heating and cooling systems, orientation to the sun and geographic location. Other such tools abound: the designers of 4 Times Square calculated its energy consumption using a free package called DOE-2, developed by James J. Hirsch & Associates together with the Lawrence Berkeley National Laboratory, with funding from America's Department of Energy.

Greener by design



In the old days, says Mr Bernstein, assessing a building's environmental impact had to be done with spreadsheets, calculators and informed guessing, and three-dimensional modelling was primarily used to prepare presentations. But now the three-dimensional computer models are being used with sophisticated analytical tools. “We are getting to the next phase where you can analyse rather than simply represent,” he says. It is then possible to predict how much energy and water a building will consume, how much material will be needed, and other parameters that determine its LEED certification. All of this is old hat for the airline and automobile industries, where computer models have long been used to trim costs and streamline design before construction begins. Now the same technology is being applied by architects.

Computers also make possible entirely new designs. 30 St Mary Axe, for example, could not have been built without a computer model to specify the exact shape of every one of its 5,500 glass panels, or to model the airflow in and around it. Similarly, computer modelling made possible the Avax office building completed in Athens, Greece, in 1998. It has sheaves of glass which open and close automatically, depending on the intensity and angle of the sun, to provide sunlight while preventing the building from overheating. The ventilation system in Pittsburgh's convention centre uses the natural “chimney effect” created by its sweeping roof to draw air through vents by the river below, cooling the building without using a single fan.

This is more than a mere fad, or the use of technology for the sake of it, says Mr Bernstein. Green architecture will, he suggests, help to reshape the construction industry over the next five years, with ever more innovative, energy-efficient and environmentally friendly buildings. “No one is doing this for fun,” he says. “There's too much at stake.”

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REPORTS

Playing to win

Dec 2nd 2004
From The Economist print edition

Computing: How close is the relationship between real-world skills and video games, on playing fields and battlefields?

IS DWIGHT FREENEY the best player in America's National Football League (NFL)? He has a clearer grasp than anyone else of the strategy and tactics necessary to win in the brutal, chaotic game. He also has the quick reactions necessary to respond to the rapidly changing conditions at the line of scrimmage, where nimble 150kg giants, bulging with padding and sporting helmets and face-masks, barrel into and around each other. How can you tell? He won the 2004 “Madden Bowl”, a video-game tournament in which NFL players compete on screen, rather than on the field, and which is held each year just before the Super Bowl, the championship of real-world American football. On the screen, Mr Freeney dominated, holding his opponents scoreless.

On the real-world field too, Mr Freeney is by all accounts a good player. A defensive end, he is unusually fast and can put a great deal of pressure on the opposing team's quarterback. However, in the 2003-04 season, when Mr Freeney won the Madden Bowl, the defensive line for his team, the Indianapolis Colts, was one of the worst in the league, according to footballoutsiders.com, a website which performs rigorous statistical analyses of the game of football. So far this year, the Colts' defensive line is ranked dead last. Other football players who did well in the virtual championship—such as David Carr, a mid-ranked quarterback for the Houston Texans, and Dante Hall, a mediocre wide receiver for the Kansas City Chiefs—have similarly unremarkable records in real life.

Mr Freeney demonstrates that real-world skills translate readily into the virtual world: professional football players turn out to be good at virtual football, too. But what if the skills do not translate in the other direction? The assumption that skills learned in a simulated environment can be readily transferred into the real world is widespread in fields including pilot training and, increasingly, military training. But is it correct?

Lock and load

As video-game technology has steadily improved and the gadgets of war have grown more expensive, America's military is relying more heavily on computer games as training tools. Some games which the military uses are off-the-shelf products, while others are expensive, proprietary simulations. A 2001 report by RAND, a think-tank, boosted the enthusiasm for military gaming when it concluded that the middle ranks of the army were experiencing a “tactical gap”. Because most lieutenants and captains had not commanded troops in battle, or had not trained extensively enough in mock battles, they lacked the know-how necessary to do their jobs well. Fixing this, either by keeping infantry commanders in their

jobs longer or by stepping up the pace of training, proved difficult—which led to a proliferation of initiatives in different branches of the military to develop games for training purposes.

The “tactical gap” may now have disappeared, as a result of the war in Iraq. A paper published this summer by Leonard Wong of the Army War College in Carlisle, Pennsylvania, asserts that the “complexity, unpredictability and ambiguity of post-war Iraq is producing a cohort of innovative, confident and adaptable junior officers”. Nonetheless, games remain a far cheaper training method than invading countries and waging wars. Yet their true effectiveness is far from certain. An eagerness on the part of the military to save money and embrace a transformative mission, and an eagerness on the part of the gaming community to see itself as genuinely useful, rather than as merely providing frivolous entertainment, may be obscuring the real answers.

In the case of football, there is no shortage of data to analyse. Not only is there a score at the end, and a clear winner and loser, but a multitude of data can be harvested as the game is under way—passes completed, sacks allowed, fumbles forced and so on. For those unfamiliar with American football, the details of these data are unimportant—the relevant fact is that they exist. The same cannot be said on a battlefield. In the proverbial fog of war, there is no easy way quantitatively to measure success or failure in the many different aspects of warfare.

“As gaming technology improves and military hardware becomes more expensive, games are being relied upon more heavily as training tools.”

Other sports, especially baseball, offer a greater wealth of data. However, no other sport seems to match the set of psychological and physical skills needed on a battlefield so well. Vince Lombardi, probably the most famous coach in American football's history, enjoyed comparing the football field to a battlefield. But the more important comparison is the converse—that a battlefield can seem like a football field, according to Lieutenant-Colonel James Riley, chief of tactics at the Army Infantry School in Fort Benning, Georgia. Indeed, Colonel Riley says his commanding general makes this very analogy constantly. In football, as in infantry combat, a player must be aware of both the wider situation on the field, and the area immediately surrounding him. The situation changes rapidly and the enemy is always adapting his tactics. Physical injuries abound in both places. Football is as close to fighting a war as one can come without guns and explosives.

The generals would thus be chagrined to hear Mr Freeney say that while playing football has made him better at the video game, the video game has not affected his real-world performance. Mr Freeney highlights the surreal experience of playing a video game where he knows the onscreen characters (EA Sports, the manufacturer of Madden, is proud of its realistic depictions of real-world football players) and indeed of playing as himself on screen. “It's not the total Dwight Freeney,” he says. “There are some similarities.” For the military, which is training soldiers for life-or-death situations, are “some similarities” enough?

According to Colonel Riley, they just might be. All training exercises, whether in a mocked-up urban combat environment or on a computer screen are, he says, “partial task simulators”. The army will not, after all, actually try to get its soldiers to kill each other for practice. And Colonel Riley asserts that some games, in particular “Full Spectrum Command”, a game he uses to train infantry captains, can usefully impart a partial skill set. The single most important thing for a simulation to achieve, he says, is the suspension of disbelief. This is easy to achieve in, say, a flight simulator. When flying a real aircraft, the pilot sits in a seat and manipulates controls, looking at a screen—much as he does in a simulator.

But simulating infantry combat, as Colonel Riley is doing, is much more difficult. As he admits, he is not certain how much “simulation dexterity translates into reality”. However, he maintains that “Command” is a useful training tool. An infantry captain commands a company of 130 men. Without the simulation, putting a new captain through an exercise meant using 129 men as training tools—an enormous overhead. Colonel Riley says that the simulation, however flawed, is an improvement. It can help to teach a captain battlefield tactics—how to deploy troops, when to call in artillery or airstrikes, and so on. And Colonel Riley says that the game has sufficient fidelity to the real world: the graphics are good enough, and the artificial intelligence of the enemy clever enough, to help teach captains how to make command decisions.

“The goal of OneSaf is to simulate the entire army. If it works, it will allow commanders to evaluate the effects of new tactics or hardware.”

Paradoxically, the larger the scale of the situation being simulated, the better and more useful a simulation might be. “Full Spectrum Warrior”, a game which, like “Command”, was developed under the auspices of the Institute for Creative Technologies (ICT), a

military-funded centre at the University of Southern California, is a “first-person shooter” game which simulates infantry combat at the squad level—ten individuals or so. It has received a lot of attention because it exists in two versions—one of which is used as a military training tool, while the other is on sale to the public.

The ICT trumpets it as an especially accurate rendition of close infantry combat, developed in co-operation with the infantry school at Fort Benning. However, Colonel Riley says that it does not meet the needs of any of his courses, and that when infantrymen play the game, they complain of its lack of fidelity. The smaller the simulation, the bigger the disjunction between the tasks necessary in reality and those on the computer.

The opposite extreme is exemplified by OneSaf, a large-scale simulation being developed by the army in Orlando, Florida. The goal of OneSaf is extremely ambitious: to simulate the entire army. Unlike “Warrior” and “Command”, it is not meant to be used as a training tool to hone soldiers' instincts, but by planners and, in the long run, even front-line troops, to see what would happen in a given situation. OneSaf is an enormously complicated software framework which is expected to take years to develop.

It will surely not be a perfect recreation of the world. But it illustrates the power of technology to be transformative in a way that “Warrior” and “Command” are not—since they are not as good as training exercises in the field, but merely a cheaper alternative. OneSaf, if it works, will allow commanders to see in a virtual world the effects of new tactics or hardware—a fundamentally new capability. Rather than merely recreating the world, in short, elaborate simulations might someday be powerful enough to change it.

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CASE HISTORY

Why the future is hybrid

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Automotive technology: Hybrid petrol-electric cars such as the Toyota Prius are becoming increasingly popular. But are they any more than a rest-stop on the road to the hydrogen car?

WHY has the Toyota Prius become the car industry's most talked about product? Since 1997, only about 250,000 have been sold, a paltry number by the industry's standards. The Prius is hardly big, fast or beautiful—the attributes that usually appeal to commentators, aficionados or, for that matter, buyers. And yet it is significant because it is the world's first mass-produced petrol-electric hybrid car, powered by both an internal-combustion engine and an electric motor. The second-generation Prius, launched in 2003, won some of the industry's most prestigious awards—it has just been named European Car of the Year 2005—and generated a buzz out of all proportion to the car's prevalence on the roads.

By choosing to drive a Prius, buyers can demonstrate how green they are without paying any penalty other than a slightly higher purchase price. Compared with a new American car of the same size, the Prius consumes roughly half as much petrol, and so releases half as much climate-changing carbon dioxide. Moreover, its emissions of smog-forming pollutants, such as nitrogen oxides and hydrocarbons, are 90% lower. Yet the Prius still manages to deliver the comfort and performance of a conventional car.

The success of the Prius has taken Toyota by surprise. The average wait at American dealerships is currently six months, even though the company increased its sales target for North America from its initial estimate of 36,000 units to 47,000 for 2004. To meet demand, Toyota announced another increase in August, saying it would push monthly global production up next year by 50% to 15,000 cars, and double its allotment for America to 100,000 units. While that number is still only one-quarter of last year's sales for America's most popular Toyota model, the Camry, it shows that consumers are willing to pay a premium for clean, environmentally friendly cars—as long as there is no need to compromise on performance.

Other carmakers are scurrying to catch up. CSM Worldwide, an automotive research firm, reckons that at least 20 new hybrid models will appear in America by 2007. Besides this year's new Ford Escape and Honda Accord hybrids, Toyota will add two sport-utility vehicles (SUVs) to its hybrid line-up early next year. DaimlerChrysler recently announced that it will introduce a Mercedes hybrid within the next five years, and Porsche is considering a hybrid version of its Cayenne SUV. Even General Motors, one of the strongest proponents of hydrogen fuel-cell cars, has jumped on the hybrid bandwagon with two pick-up trucks, a sedan and several SUVs to follow. Thanks to the convergence of geopolitics, technology and fashion, hybrids are picking up speed.

An old new idea

While the arrival of mass-produced hybrids is new, the idea itself is not. Indeed, it dates back to early automotive history when cars powered by electric motors, steam or internal-combustion engines all accounted for significant shares of the market. Why hybrids failed then is best illustrated by the example of an American engineer named H. Piper, who filed a patent for a petrol-electric hybrid vehicle in 1905. His idea was to use an electric motor to assist an internal-combustion engine, enabling it to achieve a thrilling 40kph (25mph). Unfortunately for Mr Piper, petrol-powered internal-combustion engines achieved those speeds on their own just a few years later, undermining the more complex and expensive hybrid approach. Petrol engines soon ruled the roost.

Priorities began to change in the early 1970s, when the oil crisis increased demand for less fuel-thirsty cars. As a result, the overall fuel efficiency of cars and trucks improved dramatically (though it stalled in America in the late 1980s as cheap petrol and a regulatory loophole encouraged sales of SUVs and light trucks). Moreover, in the 1990s, concern began to grow over the impact of fossil-fuel consumption on climate change.

During the 1990s, all of the big three American carmakers developed diesel-electric hybrid concept cars, though none made it into production. Instead, the focus shifted to pure-electric vehicles, which are technologically simpler than hybrids. But their high cost and limited range deterred consumers. Even the most advanced models could only go about 100 miles before they needed to be plugged in and recharged for several hours. By 2000, most electric cars had been taken out of production.

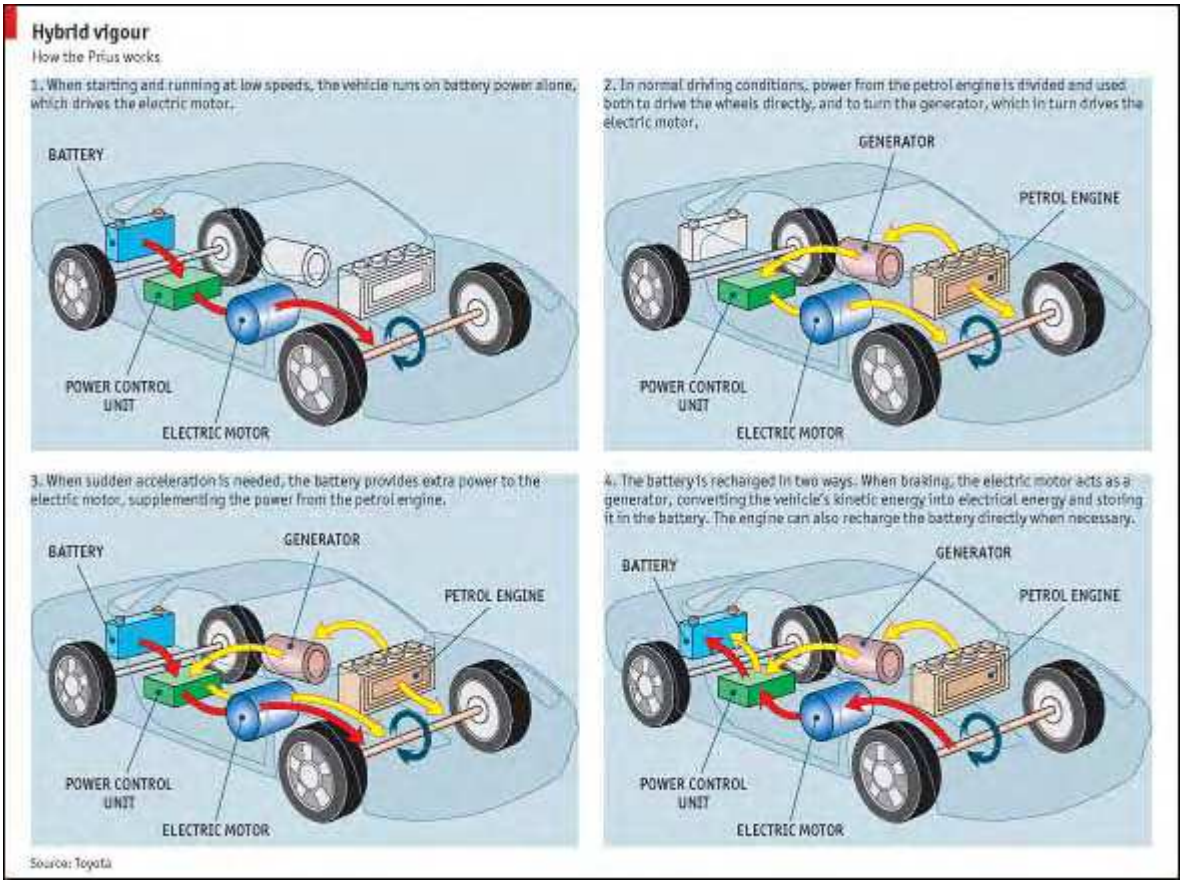
Meanwhile, Toyota released its first Earth Charter in 1992, setting the goal of minimising its overall environmental impact. In September 1993, the company began to plan the development of a car for the next century, dubbed Globe 21st Century, or G21. Originally, the plan was to produce a car with 50% better fuel economy than existing vehicles. But over the course of the project this target was raised to 100%, at which point it became clear that tweaking a petrol engine would not suffice. Instead, a more radical solution would be needed: a hybrid.

Despite the higher cost and complexity of a hybrid system, Toyota decided to press ahead with a massive research and development effort. Improved technology—such as better batteries and cheaper, more powerful control electronics to co-ordinate the two propulsion systems—meant that a mass-produced hybrid was now feasible. In 1997, the Prius was launched in Japan. It was followed by Honda's Insight hybrid in 1999.

When the Prius went on sale in America in 2000, it did not cause much of a stir. Indeed, even last year, Honda and Toyota sold about the same number of hybrids in America. This year, however, Toyota will sell about twice as many as Honda. The Prius took off thanks to the combination of rising petrol prices, celebrity endorsements and a futuristic redesign. (There is no petrol version of the Prius, so the car makes a statement in a way that the Honda Civic, which is available in both petrol and hybrid versions, does not.) It is the first hybrid to become a hit.

Hybrid anatomy

There is more to the Prius than clever marketing, however. To understand why, it is necessary to look under the bonnet at the way different kinds of hybrids work—for not all hybrids are the same. The simplest kind is the “stop-start” or “micro” hybrid, which is not generally regarded as a true hybrid because it relies solely on an internal-combustion engine for propulsion. As the “stop-start” name implies, the engine shuts off when the vehicle comes to a halt. An integrated starter-generator restarts the engine instantly when the driver steps on the accelerator. All of this increases fuel efficiency only slightly, typically by around 10%. But few modifications to a conventional design are required, so it costs very little. In Europe, PSA Peugeot Citroën has just introduced a stop-start version of the Citroën C3, which sells for roughly the same price as a similarly equipped conventional C3.



Next come so-called “mild” hybrid designs, such as Honda's Integrated Motor Assist (IMA)—the hybrid configuration found in the Insight, the Civic and the new Accord. In addition to a stop-start function, an electric motor gives the engine a boost during acceleration. During braking, the same motor doubles up as a generator, capturing energy that would otherwise be lost as heat and using it to recharge the car's batteries. Since the electric motor is coupled to the engine, it never drives the wheels by itself. That is why this system is called a mild hybrid, much to Honda's dismay. The design is less expensive than Toyota's more elaborate approach, but can provide many of the same benefits, says Dan Benjamin of ABI Research, a consultancy based in Oyster Bay, New York. The hybrid version of the Civic achieves 48 miles per gallon, a 37% improvement over a comparable conventional Civic.

Toyota's Hybrid Synergy Drive, a “full” hybrid system, is much more complex. (The Ford Escape hybrid uses a similar system; Ford licenses a number of patents from Toyota.) Using a “power split” device, the output from the petrol engine is divided and used both to drive the wheels directly and to turn the generator, which in turn drives the electric motor and also drives the wheels. The distribution of power is continuously variable, explains David Hermance of Toyota, allowing the engine to run efficiently at all times. When its full power is not needed to drive the wheels, it can spin the generator to recharge the batteries. The batteries also get replenished when the car is coasting or braking. During stop-and-go traffic and at low speeds, when the petrol engine would be most inefficient, it shuts off and the electric motor, powered by the battery, takes over. That explains why the Prius has a better fuel economy rating for urban driving (60 miles per gallon) than for motorway driving (51 miles per gallon)—the opposite of a conventional vehicle.

“Consumers will buy environmentally friendly cars provided there is no compromise on performance.”

The next step may be the “plug-in” hybrid, which is not the backwards step its name suggests. Unlike the electric cars of the 1990s, none of today's hybrids needs to be plugged in—but if plugging were an option it would be a good idea. Andrew Frank and his team at the University of California Davis' Hybrid Electric Vehicle Centre are working exclusively on plug-in hybrids, which can operate as pure-electric vehicles over short distances (up to 60 miles, with a large enough battery pack) but can switch to a hybrid system when needed. Since the average American driver travels about 30 miles a day, plug-in hybrids could be recharged overnight, when electricity is cheaper to produce, and need never use petrol at all, except on longer trips.

“The beauty of hybrids is that they do not require changes in driver behaviour or fuel infrastructure.”

According to studies carried out by the Electric Power Research Institute (EPRI), a non-profit organisation

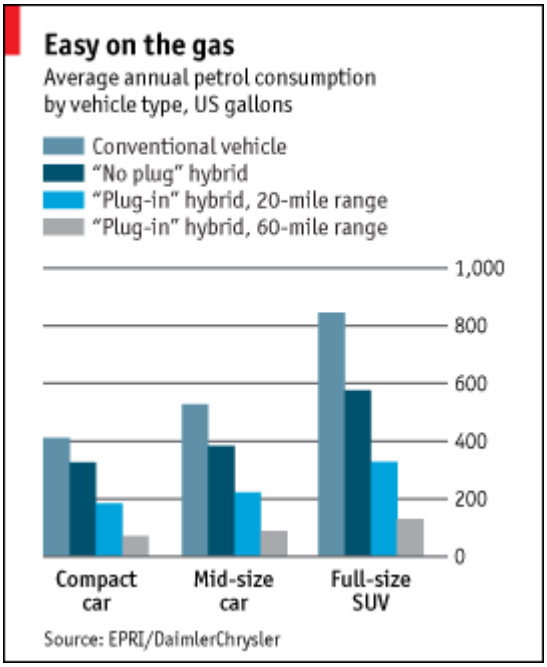
based in Palo Alto, California, plug-in hybrids could be one of the cleanest and most efficient kinds of car. In 2002, the EPRI teamed up with DaimlerChrysler to build five plug-in hybrid vans, the first of which was unveiled at a trade show in September. The larger battery packs make the upfront costs for plug-ins higher than for other hybrids. But Bob Graham of the EPRI says the added costs could be more than recouped over the vehicle's life.

Getty Images

Not everyone is bothered by high fuel consumption, however, as the current enthusiasm for enormous SUVs demonstrates. So hybrids seem likely to remain a niche: ABI Research predicts that by 2010, less than 5% of all cars sold in America will be hybrids, assuming current petrol prices persist. But if Alan Lloyd has his way, hybrids and other low-emission vehicles will become far more commonplace. Dr Lloyd is head of the California Air Resources Board (CARB), a state agency that enforces arguably the most stringent air quality rules in the world. California recently passed landmark legislation to curb the emissions of greenhouse gases by 30% beginning in 2009. Since carbon-dioxide emissions are directly linked to a car's fuel consumption, critics charge that the new rules are in effect a way to legislate fuel economy, which is supposed to be regulated by the federal government, not the states. As a result, carmakers are expected to challenge the new rules in court.

Sales of hybrids in Europe are a fraction of those in America. Instead, diesel cars have become Europe's answer to reduce fuel consumption, curb greenhouse emissions and save money at the pump. Because diesel fuel contains more energy per unit, the fuel economy of diesel cars is roughly 30% better than that of petrol-powered cars. Moreover, diesel cars are not as loud or dirty as they once were, thanks to technologies such as electronically controlled “common rail” fuel-injection systems. Diesels now make up about 45% of all newly registered cars in Europe.

Even so, they still lag behind petrol engines in terms of cleanliness. In the process of combustion, diesels create a lot of pollution, including nitrogen oxides which cause smog, and particulate matter that can cause respiratory problems. That said, some carmakers have begun to equip their cars with particulate filters, notably PSA Peugeot Citroën. Together with two British firms, Ricardo and QinetiQ, the company is building a diesel-hybrid based on the family-sized Citroën Berlingo. The aim is to achieve a combined fuel economy of 70 miles per gallon with carbon-dioxide emissions of only 90 grams per kilometre. (In comparison, the Prius delivers 55 miles per gallon with carbon-dioxide emissions of 104 grams per kilometre.)



While it is uncertain whether the car will be mass produced, it is clear that a diesel-electric hybrid would make for an extremely frugal vehicle. A study by the Laboratory for Energy and the Environment at the Massachusetts Institute of Technology, which looked at energy use over the course of a vehicle's life, predicts that by 2020, diesel hybrids could achieve the same energy-efficiency and greenhouse-gas emissions as fuel-cell cars powered by hydrogen made from natural gas. The difference is that diesel-hybrid technology is available today.

So why are diesel hybrids taking so long to appear on the roads? Hybrid diesels impose a double price

premium, explains Lindsay Brooke, an analyst at CSM Worldwide. Combining a diesel engine, (which costs around $2,000 more than a petrol engine) with a hybrid powertrain (which adds another $3,000 or so) would make for an expensive proposition. Systems to treat the exhaust would impose further costs. The prospects for diesels and diesel hybrids are particularly dim in America, where regulations in California (and, from 2007, nationwide) require diesels to be as clean as petrol-driven cars. Some progress has been made: particulate filters can now eliminate more than 90% of diesel soot. But traps for nitrogen oxides remain a challenge.

The car of the future, today

Hydrogen fuel-cell vehicles promise to be the cleanest mode of transportation, eliminating harmful tailpipe emissions altogether. But despite much publicity, and the fact that most carmakers are working on the technology, fuel-cell cars will not appear in significant quantities any time soon. America's National Academy of Sciences, which advises the government on new technologies, recently estimated that the transition to a “hydrogen economy” will probably take decades, since many challenges remain—in particular, how to produce, store and distribute hydrogen in sufficient quantities.

Hybrid cars, however, offer many of the benefits of fuel-cell vehicles, with the huge advantage that they are available now. Moreover, as the success of the Prius shows, people will actually buy them. The beauty of petrol-electric hybrids is that they do not require any changes in driver behaviour or the fuel-delivery infrastructure.

Rather than being mere stepping-stones on the way to the hydrogen cars of the future, petrol-electric hybrids are likely to be around for years, if not decades, to come. When and if fuel-cell cars become available down the road, they may not replace hybrids, but instead are likely to be descended from them, since they require many of the same components, from control systems to motors. As Joseph Romm, director of the Centre for Energy & Climate Solutions, a non-profit organisation based in Arlington, Virginia, puts it, “hybrids are almost certainly the platform from which all future clean vehicles will evolve.”

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REPORTS

Move over, Big Brother

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From The Economist print edition

Security: Privacy advocates have long warned of states spying on citizens. But technology is, in fact, democratising surveillance

LIVING without privacy, even in his bedroom, was no problem for Louis XIV. In fact, it was a way for the French king to demonstrate his absolute authority over even the most powerful members of the aristocracy. Each morning, they gathered to see the Sun King get up, pray, perform his bodily functions, choose his wig and so on. One reported in 1667 that there "is no finer sight in the world than the court at the *lever* of the King. When I attended it yesterday, there were three rooms full of people of quality, such a crowd that you would not believe how difficult it was to get into His Majesty's bedchamber."

Will this past—life without privacy—be our future? Many futurists, science-fiction writers and privacy advocates believe so. Big Brother, they have long warned, is watching. Closed-circuit television cameras, which are proliferating around the world, often track your moves; your mobile phone reveals your location; your transit pass and credit cards leave digital trails. "Light is going to shine into nearly every corner of our lives," wrote David Brin in his 1998 book "The Transparent Society". The issue, he argued, is no longer how to prevent the spread of surveillance technology, but how to live in a world in which there is always the possibility that citizens are being watched.

But in the past few years, something strange has happened. Thanks to the spread of mobile phones, digital cameras and the internet, surveillance technology that was once mostly the province of the state has become far more widely available. "A lot has been written about the dangers of increased government surveillance, but we also need to be aware of the potential for more pedestrian forms of surveillance," notes Bruce Schneier, a security guru. He argues that a combination of forces—the miniaturisation of surveillance technologies, the falling price of digital storage and ever more sophisticated systems able to sort through large amounts of information—means that "surveillance abilities that used to be limited to governments are now, or soon will be, in the hands of everyone."

Digital technologies, such as camera phones and the internet, are very different from their analogue counterparts. A digital image, unlike a conventional photograph, can be quickly and easily copied and distributed around the world. (Indeed, it is easier to e-mail a digital image than it is to print one.) Another important difference is that digital devices are far more widespread. Few people carry film cameras with them at all times. But it is now quite difficult to buy a mobile phone without a built-in

camera—and most people take their phones with them everywhere. According to IDC, a market-research firm, 186m camera-phones will be sold this year, far more than film-based cameras (47m units) or digital cameras (69m units) combined.

The speed and ubiquity of digital cameras lets them do things that film-based cameras could not. In October, for example, the victim of a robbery in Nashville, Tennessee, used his camera-phone to take pictures of the thief and his getaway vehicle. The images were shown to the police, who broadcast descriptions of the man and his truck, leading to his arrest ten minutes later. Other similar stories abound: in Italy, a shopkeeper sent a picture of two men who were acting suspiciously to the police, who identified them as wanted men and arrested them soon afterwards, while in Sweden, a teenager was photographed while holding up a corner shop, and was apprehended within an hour.

Watching your every move

The democratisation of surveillance is a mixed blessing, however. Camera-phones have led to voyeurism—and new legislation to strengthen people's rights to their own image. In September, America's Congress passed the “Video Voyeurism Prevention Act”, which prohibits the photography of various parts of people's unclothed bodies or undergarments without their consent. The legislation was prompted both by the spread of camera-phones and the growing incidence of hidden cameras in bedrooms, public showers, toilets and locker rooms. Similarly, Germany's parliament has passed a bill that outlaws unauthorised photos within buildings. In Saudi Arabia, the import and sale of camera-phones has been banned, and religious authorities have denounced them for “spreading obscenity”. A wedding in the country in July turned into a brawl when one guest started taking pictures with her phone. South Korea's government has ordered manufacturers to design new phones so that they beep when taking a picture.

There are also concerns about the use of digital cameras and camera-phones for industrial espionage. Sprint, an American mobile operator, is now offering one of its bestselling phones without a camera in response to demands from its corporate customers, many of which have banned cameras in their workplaces. Some firms make visitors and staff leave camera-phones at the entrance of research and manufacturing facilities—including Samsung, the South Korean company that pioneered the camera-phone.

Cheap surveillance technology facilitates other sorts of crime. Two employees at a petrol station in British Columbia, for example, installed a hidden camera in the ceiling above a card reader, and recorded the personal identification numbers of thousands of people. They also installed a device to “skim” account details from users as they swiped their plastic cards. The two men gathered the account details of over 6,000 people and forged 1,000 bank cards before being caught.

“The surveillance society is on its way—but not in the form that privacy advocates imagined.”

In another case, a man installed keystroke-logging software, which monitors every key pressed on a computer's keyboard, on PCs in several Kinko's copy shops in New York City. (Keystroke-logging software is sold for use by businesses to monitor their employees, or by parents who wish to monitor their children's activities online.) This enabled him to remotely capture account numbers and passwords from over 450 people who rented the terminals, and to siphon money out of their bank accounts.

Surveillance is a two-way street

But the spread of surveillance technology also has its benefits. In particular, it can enhance transparency and accountability. More and more video cameras can be found in schools, for example. Web-based services such as ParentWatch.com and KinderCam.com link to cameras in hundreds of American child-care centres, so that parents can see what their offspring (and those looking after them) are up to. Schools are also putting webcams in their classrooms: one American school district has plans to install 15,000 such devices for use by security personnel (and, perhaps one day, parents). And tech firms such as Google have put webcams in their staff restaurants, so employees can delay going to lunch if they see a long queue.

Steve Mann, a professor at the University of Toronto, calls the spread of citizen surveillance "sousveillance"—because most cameras no longer watch from above, but from eye level. Instead of being on top of buildings and attached to room ceilings, cameras are now carried by ordinary people. The video images of Rodney King being assaulted by police officers and the horrific pictures of prisoner abuse from the Abu Ghraib jail in Iraq are the best known examples. But as Mr Mann and his colleagues organised the first "International Workshop on Inverse Surveillance" in April, there was no shortage of reports on other cases: in Kuwait, a worker took photos of coffins of American soldiers being loaded on to a plane; in New Jersey, a teenager scared off a kidnapper by taking his picture; in Strasbourg, a member of the European Parliament filmed colleagues making use of generous perks.

Camera-phones could have a profound effect on the news media. Technologies such as newsgroups, weblogs and "wikis" (in essence, web pages which anybody can edit) let people distribute images themselves, bypassing the traditional media, notes Dan Gillmor, a journalist, in his recent book "We the Media". Camera-phones make everyone a potential news photographer. Unsurprisingly, old media is starting to embrace the trend. The San Diego Union-Tribune recently launched a website to gather camera-phone images of news events taken by their readers, and the BBC also encourages users of its website to send in pictures of news events.

Companies and governments will have to assume that there could be a camera or a microphone everywhere, all the time, argues Paul Saffo of the Institute for the Future. Unsafe conditions in a factory or pollution at a chemical plant are harder to deny if they are not just described, but shown in photos and videos. Animal-rights activists, for instance, operate online multimedia archives where people can store and view graphic images from chicken farms, slaughterhouses and fur factories. Such material can cause outrage among consumers, as was the case with videos of dolphins caught in tuna nets.

Last year, a German member of parliament was caught photographing a confidential document of which only a few copies were handed out (and later collected) at a background meeting on health-care reform. Some Berlin politicians are said to let reporters eavesdrop on fellow parliamentarians by calling them right before an important meeting—and then failing to hang up, in effect turning their phones into bugs.

In November 1996, Senegal's interior minister was caught out when he admitted that there had been fraud in a local election, but failed to notice that a bystander was holding a mobile phone with an open line. The election was annulled. In the same country's presidential election in 2000, radio stations sent reporters to polling stations and equipped them with mobile phones. The reporters called in the results as they were announced in each district, and they were immediately broadcast on air. This reduced the scope for electoral fraud and led to a smooth transfer of power, as the outgoing president quickly conceded defeat.

The social consequences of the spread of surveillance technology remain unclear. Mr Brin suggests that it could turn out to be self-regulating: after all, Peeping Toms are not very popular. In a restaurant it is generally more embarrassing to be caught staring than to be observed with crumbs in your beard. "A photographically 'armed' society could turn out to be more polite," he suggests, referring to an American aphorism that holds "an armed society is a polite society". Alternatively, the omnipresence of cameras and other surveillance technologies might end up making individuals more conformist, says Mr Brin, as they suppress their individuality to avoid drawing too much attention to themselves.

The surveillance society is on its way, just as privacy advocates have long warned. But it has not taken quite the form they imagined. Increasingly, it is not just Big Brother who is watching—but lots of little brothers, too.

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REPORTS

In praise of P2P

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Computing: Despite the legal wrangles over music piracy, peer-to-peer technology has many uses and is here to stay

IMAGINE an ideal global information-storage system. It would have to be huge, capable of delivering any one of millions of files, some of them of enormous size, to anywhere in the world within moments. It would have to be self-configuring and self-healing, rather than centrally controlled, to ensure there was no single point of failure. And it would have to be secure, capable of supporting millions of users, while resisting constant assault both from physical attacks on its infrastructure and from malicious software circulated within the network.

Such a system sounds highly desirable, particularly when compared with the internet, which has become a piece of critical economic infrastructure but is beset by constant security scares and can become clogged up if too many users try to do the same thing at once. Yet this ideal system already exists, in the form of peer-to-peer (P2P) file-sharing networks such as eDonkey and KaZaA.

The technology, which is used by millions of music lovers to download songs—usually infringing copyrights—is reviled by the entertainment industry. In America and Europe, music and film companies are using the courts and lobbying for new laws to outlaw P2P technology. In October, trade groups representing the entertainment industry went so far as to petition America's Supreme Court to consider

whether makers of P2P software should face “secondary liability” for copyright infringement by their users. Officials at America's Department of Justice have even suggested that using P2P supports terrorism. The technology is also condemned as a distribution system for illegal pornography.

Yet rather than being demonised, there are good reasons why the technology should be celebrated—and its benefits more widely studied and exploited. Arguing that the internet's robustness and security could be improved using technology generally associated with music piracy might seem strange, admits Yochai Benkler of Yale Law School, who raised the idea in a recent paper, but the suggestion is a tribute to “how robust these systems are”. P2P networks have, after all, withstood years of legal, technical and physical assault, but still work.

The widespread equation of P2P with piracy has obscured the fact that the same technology is also being constructively applied in all sorts of fields, from content distribution and internet-routed phone calls to distributed storage and search. Peer-to-peer technology is emerging as a powerful new approach to building large-scale computer systems, regardless of the entertainment industry's legal efforts.

Technically, “peer-to-peer” refers to a computer's ability to communicate directly with other computers running the same software, without having to go through intermediaries. While this might appear to describe the internet itself, the reality is slightly different. Although the internet was originally designed to be decentralised, it has evolved into more of a hub-and-spoke system. Personal computers at the edge of the network connect to powerful servers in the centre to do things such as send e-mails or retrieve web pages. What was once a network of equals, made up of machines that were both producers and consumers of content, became something that “looked like television with packets,” says Clay Shirky, a technology consultant.

Strength in numbers

Peer-to-peer connects computers directly—and once enjoined, personal computers can do things they are unable to do alone. Most P2P systems let users pool resources, be it processing power, storage capacity or bandwidth. In the case of music file-sharing, users are, in effect, creating an enormous shared filing system from which they can all retrieve songs. Over half of all internet traffic is now generated by peer-to-peer applications, according to CacheLogic, a P2P network-services company in Britain. Figures from BigChampagne, an internet-research firm in Beverly Hills, California, suggest that at least 10% of the content on P2P networks is legal, and does not violate the entertainment industry's copyrights.

The most active P2P system, accounting for an estimated 35% of all internet traffic according to CacheLogic, is called BitTorrent. It is an open-source software project that is free to use and enables very large files to be stored and retrieved efficiently at essentially no cost. Though it is used for pirated music, it comes into its own when distributing really large files such as movies, games and large pieces of software such as the Linux operating system—things that would otherwise be very costly for companies or individuals to make available for download.

Part of BitTorrent's success stems from the way it creates incentives for users to give as well as to take. A study in 2000 on one P2P network showed that almost 70% of users never shared files, and around half of the files available were offered by just 1% of users. BitTorrent is designed to remedy this. It rewards those who share files with others by increasing the download rate at which generous users can receive content, explains Bram Cohen, the system's creator. More sharing means there are more potential locations where copies of a given file are located, which in turn increases access speed. BitTorrent uses a technique called swarming, in which files are broken into small chunks that are then passed between peers. Two peers downloading the same file at the same time can also swap chunks they have already received from other peers, increasing the efficiency of the transfer.

P2P's ability to distribute content efficiently has prompted a number of initiatives to establish legal P2P distribution services. LionShare, devised at Penn State University, uses a file-sharing program to encourage the exchange of academic information around the world. Then there is Kontiki, a commercial

“The equation of P2P with piracy has obscured its

many virtuous uses.”

P2P outfit, which was recently evaluated by the BBC as a way to distribute programmes online. Kontiki places portions of large files on participating PCs throughout the network, to increase performance. Computers at the edge of the network, not just big servers at the centre, thus help in the storage and sending of the file. Similarly, Red Swoosh runs a P2P network for legal file-sharing of copyrighted content. “Let's take this technology that the entertainment industry is scared of, and turn it into something that they want,” says Travis Kalanick, Red Swoosh's chairman. Despite the legal rhetoric, the two sides are, in fact, quietly negotiating.

One organisation that relies on P2P content distribution is the Internet Archive, a public, non-profit library of digital content co-founded by Brewster Kahle, a technology entrepreneur based in San Francisco. The archive uses five different P2P systems so that it can distribute audio and video “without going broke on bandwidth fees”, says Mr Kahle. Without P2P, he says, only big companies would be able to afford to distribute large amounts of video online. P2P allows individuals and non-profit initiatives like his to distribute multimedia content too.

Using a peer-to-peer approach for content distribution stands the traditional limitations of the internet on its head, says Cory Doctorow of the Electronic Frontier Foundation, a high-tech lobby group. P2P does away with the “popularity penalty” that makes desirable content difficult to obtain. With systems such as BitTorrent, the more a file is in demand, the more available it becomes. Content automatically ends up being stored close to the users who request it, improving the performance of the system.

But there is more to P2P than just distributing information efficiently. The same approach has inspired other applications. The creators of KaZaA, a popular P2P network mainly used to share music and video files, sold the company and set up Skype, a free internet-telephony service that uses a similar P2P architecture to route voice calls rather than music files from one PC to another. (Both KaZaA and Skype rely on the idea that some computers should appoint themselves as “supernodes”, akin to voluntary traffic police, to ensure a smooth flow of data between other machines on the network.)

Another company, Groove Networks, uses a P2P-like system to provide shared workspaces for online collaboration: it allows, for example, more than one person to edit the same document simultaneously. P2P is also an obvious way to construct an internet-based file back-up service. And why not build a search engine based on P2P principles that recommends documents based on other users' preferences, much as Amazon recommends books based on other customers' purchases? “P2P is a perfectly natural evolution of the internet—in fact, a return to the original style and usage that the creators of the internet really had in mind,” explains Ian Clarke, the founder of FreeNet, a P2P network that provides anonymity in order to bypass censorship.

Appropriately enough given the internet's military origins, the American army is also looking into the uses of P2P technology on the battlefield, to improve the “situational awareness” of its troops. Rather than distributing information in a hierarchical manner, it might make more sense for soldiers to exchange data using a P2P approach. (Some military radios already work in this way: they use a self-configuring technique called “mesh networking”, where each radio also acts as a relay to interconnect other nearby radios.)

With all this resource-sharing and decentralisation going on, one might be tempted to think the internet is finally becoming one big happy community, as some of its more optimistic visionaries had hoped. Alas, bursting that bubble is Bernardo Huberman, the director of the Information Dynamics Lab at Hewlett-Packard Laboratories. “P2P is an architecture—what we need is a market mechanism,” he says. That way, P2P users can be properly compensated for sharing their computing cycles, storage capacity or bandwidth with others. His researchers have, for example, devised a system called Tycoon, which auctions off spare computing capacity. This sort of approach, he argues, is vital if P2P applications are to develop from today's volunteer systems into something big firms might want to adopt. “If you noticed coins dropping into your machine, you might be tempted to do that,” he says.

Peer pressure

The danger is that the legal efforts to stamp out P2P's illegal uses might also blight the prospects for its virtuous uses, by hindering investment. In the case of Napster, once the most popular P2P music-sharing service, a legal ruling in 2001 temporarily shut the company down, and its venture-capital backers were sued for vicarious liability. This dampened investors' willingness to fund other firms developing P2P-related technology, even though there are now plenty of examples of legal uses of P2P.

Meanwhile, the technologists are continuing to write their software code. “P2P doesn't need a case made in its favour—it's just technology. Once it's out of the box you can't put it back in the box, and that's the end of that,” says Mr Cohen—speaking, as you would expect of a P2P pioneer, over Skype's P2P telephone network.

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BRAIN SCAN

The journey of the sorcerer

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Craig Venter, the man who led the private effort to sequence the human genome, still has plenty of new ideas up his sleeve

IT IS an immodest ambition from a man whom even his best friends would rarely accuse of modesty. Craig Venter's current venture is a scheme to create an artificial lifeform. He and his team at his eponymous institute, in Rockville, Maryland, have already synthesised a working virus from off-the-shelf (or, at least, out-of-the-catalogue) chemicals. But viruses do not have their own metabolisms, so not everybody counts them as truly living beings. Making a bacterium (or, at least, the genome of a bacterium) would be one of the last nails in the coffin of vitalism—the curiously persistent idea that there is something more to biology than mere physics and chemistry.

It is not just curiosity that drives the project, though. Dr Venter believes such a cell, built around the minimum genome necessary for life, would be an important tool in biotechnology. A stripped-down cell could have extra biochemical pathways engineered into it, to make useful chemical products such as drugs and fuels, without any fear that the cell's resources would be diverted to other, useless, tasks. Finding those extra biochemical pathways is also on his agenda.

Another of Dr Venter's characteristics is an ability to mix business with pleasure. To this end he has fitted out his racing yacht, *Sorcerer II*, as a laboratory, and is sailing round the world collecting samples. These are flown back to Rockville to undergo “whole ecosystem” genome analysis—a process that tries to extract and analyse DNA from all the bacterial species in the sample. Since bacteria are the most abundant form of life on Earth, he hopes this process will eventually reveal most of the genes on the planet.

From gadfly to guru

Dr Venter first came to public attention in 1991. At the time, he was working in the National Institutes of Health (NIH), America's huge, federal medical-research establishment. The Human Genome Project, which planned to chew its way through all 3 billion genetic “letters” that carry the instructions for making a human being, was just getting going. But all geneticists knew that only a few of those letters—probably less than 5% of them, actually constituted the genes. Dr Venter produced a short-cut that enabled people to get directly at the genes. He did not actually invent the idea of making so-called complement DNA (cDNA), by copying the messenger molecules that carry genetic information from the cell nucleus, where the genome resides, to the protein-making machinery in a cell's periphery. But he was the first person to make it work routinely.

His technique caused a kerfuffle for two reasons. First, the biologists behind the Human Genome Project feared that if the genes could be plucked so easily from the dross, then the effort to sequence all 3 billion letters would be abandoned by parsimonious politicians. Though the non-gene part of the genome is often dismissed as mere “junk DNA”, they felt (correctly) that at least some of it must be biologically important, so disentangling the whole lot was therefore necessary.

That turned out to be an idle fear. The importance of the whole genome was quickly recognised from on high, and the money kept flowing. But the second worry connected with the technique stirred up a hornet's nest whose swarm followed Dr Venter for a decade. At the behest of the NIH's lawyers, his first set of cDNAs were sent off to the patent office. DNA sequences had been patented before, so there were precedents for doing this. But the patents were for whole genes, and for genes that had solid, useful functions—namely drug production.

Dr Venter's cDNA sequences were not even whole genes. The trick that allowed him to succeed where others had failed was that he copied only a fragment of a gene—the longest fragment that a DNA-sequencing machine could analyse in one go, which is well short of the length of most full genes. These fragments enable researchers to locate genes on chromosomes. Also, enough of them taken from different parts of a messenger molecule can allow a gene to be patched back together. So they certainly had enough utility for it to be worth asking the patent office if they counted as intellectual property. But many of Dr Venter's fellow biologists were outraged by the whole idea of patenting DNA in bulk, and they made their opinions abundantly clear.

In the end, the NIH withdrew its patent applications. But the affair both poisoned relations and gave Dr Venter a glimpse of a wider world. Shortly afterwards, he withdrew to set up TIGR, the Institute for Genomic Research. Thus began his quest to marry academic and commercial research in what he saw as a return to a more 19th-century way of doing things that had prevailed before the split between pure and applied science became so clear-cut.

“How long will it take to make a synthetic bacterial genome? An announcement could come as soon as next year.”

The money for TIGR came from Wallace Steinberg, a venture capitalist. The idea was to use the cDNA technique to look for interesting genes. The commercial side of the operation would have a period of grace to examine them with a view to patenting and exploitation. The academic side could then publish interesting findings in scientific journals. It might have worked. But the commercial side, which was incorporated into a firm called Human Genome Sciences (HGS), was led by William Haseltine, a man with an ego as large as Dr Venter's, but a far more single-minded money-making agenda. The two men fell out, and the two sides of the organisation got a divorce; HGS set up its own, internal research arm.

A shotgun wedding

That, paradoxically, was the making of Dr Venter. For it freed him to try a new idea. At the time—the mid 1990s—DNA sequencing was a painstaking affair that involved breaking an organism's genome into pieces, growing the pieces in bacteria or yeast cells, extracting them again, breaking them up still further, feeding the small bits into a sequencing machine, and then trying to put the whole jigsaw puzzle back together in reverse. Dr Venter suspected it could be done much faster by shredding entire genomes in a single step, sequencing the bits, and using a computer to fit those bits back together. Again, the idea had been kicking around for a while. But with the aid of a biologist called Hamilton Smith, he made it work.

The technique in question was called whole-genome shotgunning. It revolutionised the field. Its first fruits were the genomes of bacteria. Indeed, one of Dr Venter's favourite anecdotes is how he received a

letter from a funding committee denying his application for money to deploy the technique at precisely the moment he was putting the finishing touches to a paper describing the first bacterial genome ever sequenced. But it occurred to Dr Venter that larger genomes than those of germs might fall to the new technology. And, by a lucky co-incidence, the bosses of PerkinElmer, the firm that made the DNA-sequencing machines used by Dr Venter and most other workers in the field, were having similar ideas.

The resulting collaboration was called Celera Genomics, and its goal was to produce a privately financed version of the human genome's sequence. If genomic officialdom had had qualms about the patenting of cDNA, it had paroxysms at the idea that the entire human genome might somehow fall into private hands. The result was a massive reorganisation and speeding up of the public Human Genome Project, with a view to putting huge quantities of the sequence into the public domain, and so beyond the reach of Celera's patent lawyers.

In fact, Dr Venter had never intended to patent more than a few hundred crucial (and, he hoped, ultimately profitable) genes. Indeed, some accounts from inside Celera at the time suggest he was almost as much at loggerheads with the firm's lawyers as were the public project's biologists. As in the case of TIGR, the biologist and the businessman were uncomfortable in the same skin. Instead, what he had in mind was a business that would deliver “value-added” biological information to drug companies and other researchers, much as Bloomberg packages and delivers financial data.

The outcome of the race between Celera and the public project was a politically brokered tie in which Dr Venter and his rivals shared a platform with President Bill Clinton. It was good publicity. But in the end, Celera failed. It delivered the genome (one of the six individuals sequenced being Dr Venter himself), but failed to deliver profits. The added value which it promised was not deemed valuable enough by potential customers and Dr Venter, in the time-honoured phrase of public-relations offices everywhere, “left to pursue other interests”—the main ones being synthetic biology and whole-ecosystem sequencing.

How long it will take to make a synthetic bacterial genome remains to be seen, though an announcement could come sometime next year. But whole-ecosystem analysis is already yielding staggering results. The technique is a logical extension of whole-genome analysis. The DNA in a water sample is extracted, shredded and sequenced, and the sequences assembled by computer. If the technique works properly, it will sort out the individual bacterial genomes without there ever being a need to culture the species to which those genomes belong.

Towards the planetary genome

The need to culture has held bacteriology back since its earliest days. Culturing bacteria is time-consuming, and many bacteria do not thrive in captivity. Bacteriologists knew that, of course, but they could only guess how little they knew. And the answer seems to be that they knew almost nothing. Before the first collecting jar was dipped in the water in *Sorcerer*'s wake (off the coast of Bermuda, as it happened), about 5,000 species of bacteria had been classified. That single sampling site, Dr Venter reckons, yielded 47,000 new species, and the other sites (one every 200 nautical miles, or 370km, between Bermuda and Sydney, via the Pacific) have been just as productive. Altogether, Dr Venter thinks he has identified some 5m new genes. Not yet a genome for the planet. But a start.

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Telephony

The phone call is dead; long live the phone call

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Who wins and who loses as phone calls move on to the internet?

VONAGE, Skype, Net2Phone, 8X8—these are not exactly household names today. Time Warner and Verizon in America, and BT in Britain, by contrast, are almost universally known, if not always loved. What would happen if all of these firms—a band of specialised upstarts, the giant cable companies and the traditional telecoms titans—were to clash head-on in a global battle to provide a new communications technology that is certain to replace the one most commonly used today?

That is what is about to take place. According to Global Advertising Strategies, a marketing consultancy, “brand wars” will break out in the next six months, as the communications technology in question, called “voice over internet protocol” (VOIP), moves “from the early adopter to an early majority market stage”. The consequences of this migration—which, in effect, makes traditional telephone networks obsolete—are enormous.

VOIP involves sending voice conversations (or video calls, for that matter) as digital packets over data networks such as the internet, alongside e-mails and web traffic. This is in contrast to traditional phone calls, which require a dedicated circuit to connect the callers at each end. Because VOIP service relies on software, rather than the traditional physical telephone infrastructure—voicemails, for instance, come into one's e-mail inbox and can be saved and forwarded—it upsets the entire telecoms industry, for two reasons.

First, while traditional telephony takes account of geography, distance, and time, says Michael Powell, America's telecoms regulator, “VOIP shatters all three”. In most cases it makes no difference to a VOIP caller where he is, how far away from the person he is calling, or how long they talk. VOIP phones can have traditional telephone numbers, yet still work no matter where they are, provided they are plugged in to a broadband internet connection. Lots of Indian mothers in Delhi have Vonage phones with the American area code 650 so that they can make cheap “local” calls to their sons in Silicon Valley.

Second, VOIP uncouples the two previously intertwined components of telephony: access to the network (via a wire running into your house, for example) and service (the ability to make and receive calls). Traditionally, both have been provided together. With VOIP you can buy broadband access from one firm and a telephony service from another—or even from a company in another country altogether.

Consumers have three broad options when switching to VOIP. The first is to go with one of the pioneering VOIP specialists. In America, the clear leader of these is Vonage, based in New Jersey. Founded three years ago, it now has over 300,000 customers and is adding 80,000 every quarter, according to Jeffrey Citron, its boss. Also in this crowded category, somewhat ironically, is AT&T, the remnant of America's former telecoms monopoly, which this year stopped marketing ordinary telephone service to retail customers to concentrate on its VOIP offering. “Vonage is claiming victory because they have the yellow jersey in the third stage of the Tour de France,” says Hossein Eslambolchi, AT&T's technology chief. “I guarantee you we'll be wearing it in the 21st stage.”

But as Vonage, AT&T and the like fight price and feature wars against one another, they are looking over their shoulders at the giant cable companies, such as Time Warner, Cablevision and Cox, which are also aggressively pushing VOIP services. The cable firms' great advantage is that they already have many customers, either for cable TV or broadband internet access, or both. They are now trying to persuade existing customers to sign up for a third service, telephony, which can be delivered over the same pipes using VOIP. Customers get the convenience of a single bill for the resulting “triple-play bundle”.

Evolving dinosaurs

Meanwhile, the dinosaurs of voice—America's baby bells such as Verizon and Qwest, and national incumbents such as BT and Korea Telecom—are belatedly starting to push VOIP. These “telcos” have millions of customers for traditional phone service, and may also be selling them broadband access via supercharged “digital subscriber” phone lines (DSL). Many telcos are now upgrading their networks to support video as well, so that they too can offer the coveted triple-play bundle.

Will the cable and telco giants squash the specialist upstarts? Cyrus Mewawalla at Westhall Capital, an investment-advisory firm in London, suggests that the niche players, such as Vonage, unable to offer bundles of services, “will die out”. Yet the giants have their weaknesses too.

The cable companies are limited to serving customers within their geographic footprints, and can offer only phone numbers from those regions. VOIP phones provided by cable companies usually cannot be moved to a different internet provider elsewhere in the world. It is this portability that makes the VOIP specialists so popular with students and business travellers, who can carry their phone numbers around with them. The cable companies therefore lack perhaps the single coolest feature of VOIP, says Sandy Miller of 3i—a British venture-capital firm that has invested $27m in Vonage—which is that pure VOIP is totally global and footloose.

The telcos face a different problem. Even as they are rolling out their own VOIP services, they loathe having to do so, for margins on VOIP are much lower than on traditional telephony services. As Global Advertising Strategies puts it, “switching a regular phone customer to VOIP translates into losing as much as $10 a month in revenue from him.” The telcos, in other words, would much prefer that VOIP did not exist at all, because they like the traditional business model. They offer VOIP only half-heartedly, to avoid losing customers altogether. Meanwhile, they are using their usual weapon—regulatory bickering—to try to impede its adoption.

Moreover, today almost all broadband connections in the world are fixed links provided either by telcos or cable companies. But in the next couple of years a handful of promising new wireless technologies, the best known of which is WiMax, will start to blanket large regions with broadband access over the airwaves.

This will be a huge boon to consumers, who will be able to bypass the broadband duopoly of cable and telecoms companies. It will also help the VOIP specialists by combining the benefits of VOIP with the convenience of wireless mobility (at least within regions with wireless broadband coverage). Vonage and others are already working with equipment vendors to make portable handsets based on short-range Wi-Fi technology, for use within homes and offices. These should be available next year. WiMax handsets could follow in 2006. If he can keep his lead until WiMax arrives, says Mr Citron, he could leave his cable and telco rivals in the dust.

Who will be the biggest losers? Not the fixed-line telcos, even though their revenues may fall by 25% by 2010 due to VOIP, according to Mr Mewawalla. The mobile operators are likely to be the big losers, with their revenues plunging by 80%. Together, VOIP and wireless broadband could fatally undermine their costly third-generation (3G) networks.

In short, VOIP upends the entire telecoms landscape. As consumers flock to make cheap calls over the internet, a whole industry must find ways to turn VOIP from a threat into an opportunity.

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Executive perks

In defence of the indefensible

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Is showering the boss with perks good for shareholders?

Boosting his productivity

NOTHING has come to embody corporate greed like executive perks: the corporate jets, chauffeured limousines and country-club memberships that bosses consume in a seemingly deliberate attempt to outrage public opinion. Not for nothing has Warren Buffett, Omaha's celebrated investor, named his corporate jet "The Indefensible".

The usual explanation for the perk is that it is a (rather enjoyable) way for corporate insiders to misappropriate shareholders' money. Because perks are poorly disclosed, shareholders have no way of knowing when the boss is living it up at their expense. This has led to the theory that perk-laden executives are likeliest to be found in firms with lots of cash, but few investment prospects.

But in a recent paper*, Raghuram Rajan, the IMF's chief economist, and Julie Wulf, of the Wharton School, looked at how more than 300 big companies dished out perks to their executives in 1986-99. It turns out that neither cash-rich, low-growth firms nor firms with weak governance shower their executives with unusually generous perks. The authors did, however, find evidence to support two competing explanations.

First, firms in the sample with more hierarchical organisations lavished more perks on their executives than firms with flatter structures. Why? Perks are a cheap way to demonstrate status. Just as the armed forces ration medals, firms ration the distribution of conspicuous symbols of corporate status.

Second, perks are a cheap way to boost executive productivity. Firms based in places where it takes a long time to commute are more likely to give the boss a chauffeured limousine. Firms located far from large airports are likelier to lay on a corporate jet.

So there it is. The boss needs his luxury pad on Fifth Avenue and his chauffeured stretch-limo because he might otherwise do less work. Making it harder for the boss to consume conspicuously risks dangerous anarchy as, bereft of its symbols of corporate status, the firm's hierarchy collapses into a muddled heap. Perhaps, in light of these findings, Mr Buffett should call his next jet "The Indispensable".

* "Are perks purely managerial excess?," NBER working paper, 2004

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Civil aviation in India

More passages to India

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The state is easing its restrictions on flights to and within India

TRY to book a flight to or from India during the next few months and you will find it almost impossible. Internal flights too are overbooked at this season, when cooler weather attracts tourists, businessmen and visits home from India's vast diaspora. But this may soon change—or so intends India's new civil-aviation minister, Praful Patel, a successful businessman.

For years Air India and Indian Airlines, the state-owned and highly bureaucratic international and domestic carriers, have used political clout to stop foreign airlines expanding flights to India and to curb the growth of private-sector internal operators. The latter in turn have worked similarly to block new Indian operators or potential joint-ventures with foreigners. Meanwhile, political and bureaucratic indecision has stymied efforts by the two state airlines to order new aircraft. So while 51 foreign airlines fly into India, carrying 70% of that two-way traffic, these two fly to only 25 other countries. Airport modernisation too has been stalled.

Like most of his predecessors, Mr Patel has promised a new civil-aviation policy (by the end of this month), including a regulator for the industry. Bids are to be invited within two or three months for privatising Delhi and Mumbai airports. Construction of two private-sector airports looks likely to go ahead, hopefully, after many hold-ups, in booming Bangalore. And, supposedly, 28 public-sector airports are to be rebuilt.

Some new aircraft are also likely to be bought. Indian Airlines has ordered none since 1988; now it is in the final stages of government approvals to purchase 43 from Airbus. Air India, having ordered none since 1991, on November 24th abandoned plans for ten new planes and instead proposes to order 50, boosting its fleet (after discarding ten) by 2012 from today's 34 to 74; a new low-cost subsidiary will get a further 18. Mr Patel hopes to cover part of the cost, some $5 billion, by selling 20-25% of the two airlines' equity after a couple of years—if the government's leftist coalition allies let him.

The skies too are being opened. Foreign airlines are to get more slots at Indian airports; British airlines 40 a week instead of 19 now. India's two main private-sector airlines, Jet Airways and Air Sahara, will be able to fly abroad, which compensates them for accepting competition at home from no-frills Air Deccan and other possible new operators. Deccan, launched 15 months ago, now has 74 flights a day to 24 destinations and is raising $50m-60m of private equity. Jet, which carried 44% of India's 15m domestic passengers last year, is cutting costs and prices in response.

But protectionism is not grounded yet. The government still will not allow foreign airlines to start joint-ventures, though the limit for foreign equity stakes from sources with no significant airline connections has been raised from 40% to 49%. Virgin's Richard Branson, who was in India last weekend, is hoping to fudge that restriction and buy 25-49% of a carrier such as Deccan or Jet on his own, purely personal, account. But for now open skies have their limits.

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Private planes in China

As rare as pandas

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A market with sky-high potential

ON THE tarmac at Hangzhou airport in China's Zhejiang province, a gaggle of photographers jostle around what promises to be the status symbol of tomorrow's China: a $5m twin-engine Raytheon plane. With his hand on the gleaming nose-cone, Raytheon salesman Jason Liao is steering the photographers on the last stop of a seven-city marketing tour. Resulting sales, he hopes, will multiply the number of personal planes in the country. But that will be a less than astounding achievement. “As of today in the mainland there is only one privately owned jet,” says Mr Liao.

This may seem strange in a country where it takes a fortune of $141m to qualify for *Forbes* magazine's list of the 100 richest inhabitants. But until January this year, the private ownership of planes was not formally sanctioned. Two years ago, all but three of the country's air-routes were controlled by the People's Liberation Army Air Force, and only next month will the procedures and airworthiness standards for so-called general (ie, non-civil, non-military) aviation be fully promulgated. Not surprisingly, infrastructure and trained pilots are thin on the ground.

That is changing as China's leaders begin to see general aviation as a way to unlock the potential of the country's vast interior. When Beijing hosts the 2008 Olympics, hundreds of guests are expected to fly in on their private planes and dock at the airport's new VIP terminal. By then it is scheduled to have the world's largest facility for servicing private planes.

Far inland, new airports have been commissioned in Gansu, Qinghai, Sichuan and Xinjiang. And in the south-western province of Yunnan a cluster of ten airstrips are intended to open up the region to tourism. Although all Chinese pilots today are graduates of just one flying school, four more schools are being set up. Most importantly, some 40 flying clubs have been founded around the country in an effort to foster the spirit and enthusiasm that general aviation generates in America.

“It's not a question of if China is going to be the world's second-biggest market for us, it's a question of when,” says Mr Liao. Others emphasise the need to move slowly in order to forge a culture of safety and discipline. “Go to any busy [road] junction and you'll get some idea of China's general traffic mindset,” says Andrew Edlefsen of Uniworld, a consultancy lobbying for general aviation in China. “Now imagine that in the skies.”

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Japanese industry

Not-in-time manufacturing

Dec 2nd 2004 | TOKYO
From The Economist print edition

As north-east Asia booms, Nissan runs short of steel

WHEN two good trends yield a bad result it often means that somebody has messed up. Executives at Nissan Motor, Japan's second-largest carmaker, were embarrassed this week as they halted three of its four assembly plants there for two days, because of steel shortages.

The shutdown partly reflects two good trends. Under Carlos Ghosn, Nissan has gone from five main Japanese steel suppliers to two, as part of a broad plan to cut costs by using fewer suppliers. This has succeeded, but left the firm more dependent on the chosen two, Nippon Steel and JFE Holdings. So it must manage its supply chain well to profit from the second bit of good news: booming demand for its cars.

Alas, Nissan mishandled that task, and is now scrambling to find more steel. It will have to delay production of 25,000 cars, including another shutdown at the plants for three days next week. On December 2nd Mr Ghosn said that Nissan may also have to slash output by 15,000 units in March, costing a further ¥6 billion ($58m) in profits. The timing is bad. Nissan has just launched four new models in Japan and will soon launch another.

With Nippon Steel and JFE running at full capacity, Nissan has had to look elsewhere for high-quality steel.

To be fair to Nissan, firms across the region are scrambling for more steel because China has been on a building spree and shipbuilders in Japan and South Korea have been cranking out new vessels to carry booming world trade. Other car firms in Japan are also going full tilt. Toyota plans to raise its domestic output by 300,000 units next year. Global demand has been so high that Japan's carmakers still enjoy strong exports even as they ramp up output at their plants overseas—and these plants too need steel.

Pundits have found plenty of raw material to do some bashing of their own, criticising Japan's steelmakers for not investing in new capacity to cash in on booming demand. One could think that a refreshing change: for too long, Japanese makers of everything from steel to semiconductors poured heaps of molten capital into new capacity, only to see it come out the other side as cold-rolled losses.

Early next year, JFE will shut down one of its blast furnaces to overhaul the process and boost its capacity. South Korea's POSCO will follow suit in the spring. This will crimp supply in the first half of 2005, but then boost output. And Sumitomo Metal Industries reportedly has much bigger plans: a new production line, due on stream in 2006, to boost its output of steel sheet for cars by about 400,000 tonnes a year, roughly one-third of its current output. That should be enough for over 500,000 new cars, reckons Kurt Sanger, an analyst at Macquarie Securities in Tokyo. Meanwhile Nissan will have to go on scrounging around for the stuff.

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German retailers

An end to autumnal gloom?

Dec 2nd 2004 | FRANKFURT
From The Economist print edition

Not every shop in Germany is being shunned

GERMAN shoppers are on an extended go-slow. In nine out of the ten months to October this year, retail sales were lower than in the same month a year earlier. This is putting considerable pressure on German retailers, who provide twice as much shopping space per head of population as their counterparts in Britain, a nation, supposedly, of shopkeepers. At the end of last month, Karstadt, Europe's biggest operator of department stores and mail order, pulled itself back from the edge of a financial abyss by mortgaging its future business development to its bankers.

Some German retailers, however, are managing to keep sales rising throughout the go-slow. Kaufhof, the country's other big chain of department stores, increased its turnover by 3.2% in its latest quarter, a period in which sales at Karstadt's stores fell by 7%. Kaufhof has been busily moving its image upmarket while Karstadt has moved downmarket in an attempt to find synergies with its mail-order acquisitions, Quelle and Neckermann.

Kaufhof is owned by Metro, a huge international retailer whose German department stores account for only 6% of its business. Fast-growing parts of the group, such as Metro Cash & Carry, big out-of-town wholesale stores, and Saturn, its electronic-goods outlets, have sizeable sales abroad, in promising retailing markets such as China, central Europe and Russia.

Nevertheless Metro has not been trouble-free this year. It recently sold one-third of its Extra food stores in Germany to Rewe, a competitor, to resolve a logistics problem. Extra's sales in its latest quarter were 10% down on a year earlier. “Extra just doesn't fit,” says a former Metro executive. “They should get rid of it completely.”

Although Karstadt's move downmarket has been unsuccessful, Germany's big discount retailers, Aldi and Lidl (which sell a limited range of goods at highly competitive prices), have been doing remarkably well at home. In a recent survey asking for the names of Germany's top companies, Aldi came second, sandwiched between Porsche and BMW. Hans-Joachim Körber, the chief executive of Metro, says that Aldi, a private company owned by the Albrecht brothers, is the most important brand in the country.

Aldi's formula, however, has not travelled particularly well everywhere. In Britain this week the company announced that it is planning to spend more than £500m ($950m) over the next few years opening as many as 200 stores across the country, where it already has 278 outlets.

But several of the new stores will be no more than relocations of existing shops, shifting them from the poorer areas where the company thought its formula would work best to more upmarket locations where they can compete with Britain's mighty supermarket chains, such as Asda (now owned by Wal-Mart, which once flirted with taking over Metro), Sainsbury's and Tesco. Aldi has been in Britain for 15 years, but it is a country where discounters have been losing market share for the better part of a decade.

Another type of retail outlet in Germany is also doing well. The neighbourhood supermarket is coming back, says Constanze Freienstein, a retail specialist at A.T. Kearney, a firm of consultants. Tengelmann, an operator of such shops, has increased its profits in Germany this year. It, too, is expanding abroad. For the first time, the family concern, which employs 184,000 people, mainly in Europe and North America, has raised outside finance to grow its business in central Europe.

With German shoppers still seemingly in no mood to splash out for Christmas, however, local retailers cannot rest easy. Some analysts say that even the mighty Metro, despite its international expansion and tight control of costs, is running out of new ideas. Unless Mr Körber can convince his biggest

shareholders, three German families, that he can deliver more rapid growth, perhaps through acquisition, he may find Wal-Mart, the world's biggest retailer, making fresh overtures.

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Electric power in Brazil

No switch-off, please

Dec 2nd 2004 | SÃO PAULO
From The Economist print edition

Will a giant energy auction in Brazil lift investors' spirits?

BRAZILIANS call it the mega-auction. On December 7th electricity generators will compete to supply 26,000 megawatts to a pool of distribution companies. This is by far the largest such auction anywhere. If it goes well, it should signal Brazil's recovery from a half-decade in which power rationing choked growth and investors lost billions. If not—and it may not—it will cast doubt on an ambitious “new model” for energy drawn up by the left-leaning government, darken prospects for private investment in infrastructure of all sorts, and threaten shortages four or five years hence.

The auction marks the start of a new two-tier power market. Existing generators will bid for eight-year contracts, replacing ones expiring in 2005-07. From early next year, “new energy”—ie, prospective investors plus a few existing plants—will be offered 15-20-year contracts paying a guaranteed revenue stream from tariffs partly indexed to the dollar. New energy is being pampered while old energy faces a desperate fight for contracts in a glutted market.

One problem is that the obvious source of new investment is old investors—and they have their doubts. Duke Energy, an American company, has invested 1.5 billion *reais* ($545m) in Brazil since buying CESP Paranapanema, a generator on the edge of São Paulo state, in 1999. It has been hurt by currency devaluation, by a plunge in demand when rationing was imposed and by quirky regulatory decisions. “We have no plans to invest new capital in Brazil,” said the company's “southern cone” chief, Mickey Peters, in August. Duke is keeping quiet before the auction.

Next week's “old energy” auction will set the tone for investment in new energy. Generators will have to decide whether to accept contracts at today's low prices or hold out for ones starting as late as 2007, which may well be at better terms. But private-sector suppliers such as Duke will be competing with public-sector ones, which still supply 80% of Brazil's power, much of it from old, depreciated plants. Will the public generators accept unduly low prices, undercutting private ones and undermining their own ability to invest in new energy?

The government has not helped its dubious reputation as a regulator by changing the rules at the last minute. Only last month it decided to drop 2008 and 2009 from the “old energy” auction. Prices for these later years (when demand is expected to catch up with supply) would have been close to the tariffs needed to make new plants profitable, sending a useful signal to investors. Generating companies suspect that these latter-year contracts have been dropped to keep prices low. There are similar suspicions about a recent decree limiting the number of consumers that can leave the pool and negotiate directly with generators.

Potential investors will judge the outcome of the mega-auction largely by the contract prices paid for old energy. Any average below $20 per megawatt-hour will “raise a very big red flag,” says one industry source. If prices are above $25, investors “will be a little more relaxed.”

That would bode well for next year's all-important “new energy” auction. Investors will still have gripes, ranging from suspicions about the regulator's independence to the tax burden, which eats up 40% of energy revenues. But if Brazil is to have enough electricity to fuel its economy, now expected to grow by over 5% this year, a successful mega-auction is essential.

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Mining companies

Getting together

Dec 2nd 2004
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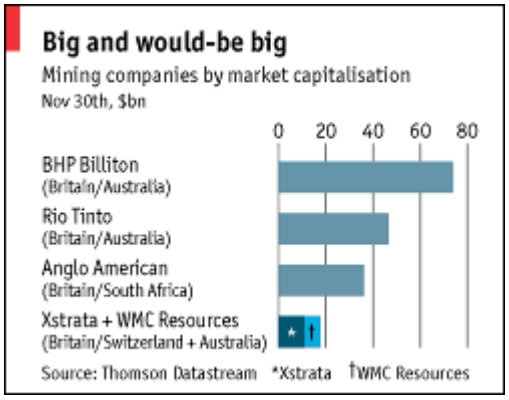
Two more steps toward mining consolidation



THREE big fish rule the pool of world mining: BHP Billiton, Anglo American and Rio Tinto. Now two middle-sized firms—Noranda, based in Canada, and WMC Resources of Australia—are likely to be gobbled up; one willingly, one not. An industry much altered since 2000 by consolidation is consolidating again.

The willing target is Noranda, Canada's biggest mining and metals company. It was put into play in mid-summer when its 43% owner, Brascan, indicated that it was ready to sell. Having eyed various suitors, in September Noranda began exclusive talks on a 100% bid with China Minmetals, a big Chinese state-owned metals trader and producer eager to ensure security of supply. But in mid-November, with no deal done, Noranda opened the door again to other bidders, who may yet appear.

That pleased some politicians and trade-unionists in Canada worried about its natural resources falling into foreign, state-owned hands and/or critical of Minmetals' human-rights record at home. But the two firms kept talking: their bosses met later, in Chile then, last week, in Cuba. Nearly 60% of Noranda's assets are outside Canada, but any foreign takeover would need official Canadian backing. Yet it is unlikely a Minmetals bid would be blocked.

Like other miners, Noranda has seen turnover leap and profits soar this year. Sales should approach $7 billion for 2004 and profits exceed $500m. The stockmarket values Noranda, which is big in zinc and nickel, at some $5.5 billion. Minmetals is large, with a turnover of nearly $12 billion last year, but it would need finance from Chinese state banks, and might not get it.

Across the Pacific, WMC faces a hostile cash bid from Xstrata, a newish name in world mining with big ambitions. London-quoted, Swiss-headquartered and already earning half its profits in Australia, Xstrata was a relatively small Swiss company until the winter of 2001-02. Then, led by Mick Davis, a former chief financial officer of Billiton, it went for a listing—as a British company—in London, traditional home of mining finance. Raising over $1 billion, it bought thermal-coal operations in Australia and South Africa, then, in mid-2003, MIM, an Australian firm, for $2.9 billion. This brought Xstrata coking coal, nickel, copper, zinc and more, and a turnover of over $6 billion this year.

If Xstrata buys WMC, that would add more nickel, copper, gold and a giant new mine, Olympic Dam, in South Australia that WMC claims includes, in addition to copper and gold, one-third of the world's known uranium deposits. WMC's present turnover is only half of Xstrata's, but its prospects are huge. The stockmarket, at least, plainly expects other bidders to turn up: though Xstrata's offer, valuing WMC at $5.8 billion, was nearly 30% above WMC's share price a month before the bid, this week the market price suggested that investors are looking for a 45% premium.

Indeed, analysts at CSFB suggested that WMC might be worth 60% extra. (CSFB's equity arm owns 24% of Xstrata.) To Xstrata, possibly. Consolidation in mining is not just about “bigger means better”, nor even bigger means cheaper, because economies of scale can be difficult to capture beyond a certain point. But in mining, size does bring diversity, of commodity, region and political risk, as well as operational flexibility. This was what drove the Anglo-Australian merger that in 2001 gave birth to BHP Billiton; and a second-rank company trying to join the big league, as Xstrata is, well knows it.

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Face value

AIDS and business

Dec 2nd 2004
From The Economist print edition

Many firms are doing too little, too late about AIDS, says Brian Brink

Get article background

THIS is a particularly busy time for Brian Brink, “senior vice-president medical”, or health chief, of global mining giant Anglo American. World AIDS Day on December 1st always sparks enquiries about how companies such as his are grappling with the challenges posed by the spread of the HIV virus. This week in Washington, DC, the International Finance Corporation launched a guide for mining firms on how to respond to the disease. Last week a survey on AIDS and business was published in Mr Brink's native South Africa. As well as answering numerous questions prompted by all of these, he is also trying to produce end-of-year figures on the spread of HIV among Anglo American's 135,000 southern African workers.

Though Mr Brink's job is an unusual one for a corporate executive, it may soon become less so. Businesses in South Africa are among the global leaders in addressing AIDS, mainly because South Africa is currently the epicentre of the epidemic, with one-eighth of the 40m people already infected with HIV worldwide. But the disease is fast moving to India (which soon will have more infected people than any other country), China and Russia. Judging by South Africa's experience, AIDS may soon move rapidly up the corporate agenda in those countries, too.

Mr Brink occasionally meets mine managers in Anglo American's empire who still doubt the value of spending time and money on combating HIV. What business is this of business? While Mr Brink says there is a moral case—who else will fight the disease among migrant workers in a remote mine in a southern African desert, say?—he also argues that there is a strong business case for action by Anglo American, which has some 35,000 HIV-positive workers. As Brad Mears of the South African Business Coalition on HIV and AIDS puts it, “the cost of keeping someone alive is cheaper than the cost of letting someone die.”

Last week, Mr Mears's group published a survey of over 1,000 firms on the impact of AIDS. Among mining houses, 60% said the disease was hurting profits and productivity. Nearly half of all financial firms and manufacturers said the same. In farming and transport (not part of the survey) the impact is probably worse. Sick workers, those who retire early or who die in the job, all make doing business more expensive—especially when, as in South Africa, the supply of healthy alternative workers is limited. Pension funds and other employee-benefit schemes are disrupted. Younger workers—in South Africa, a large part of the skilled workforce—are often worst hit. Rehiring, retraining and tackling low morale is pricey. Quantifying it all is tricky, but gold miners Harmony and AngloGold Ashanti estimate that AIDS adds $2-5 for every ounce of gold they dig. The survey did include one piece of good news: nobody thinks that investors have been scared off by the epidemic, possibly because South African firms are seen to be reacting to the threat.

Mr Brink has been focused on AIDS since 1986, when South Africa's mining industry first surveyed its workers for HIV. This was just before the epidemic took off dramatically. Conditions at firms such as Anglo American helped to spread the disease. Migrant workers live in mine hostels for months on end, far from families but close to prostitutes. Though the company soon started to distribute condoms and advice, workers became infected and then took the disease back home to their villages.

Today, Anglo American creates a health profile for every employee. Each is offered regular HIV tests, counselling and, if needed, anti-retroviral drugs to keep them healthy and productive. Under a scheme launched two years ago, some 2,300 people now get drug treatment that costs the firm 1,400 rand ($245) a month per patient. Hundreds of lives have been saved. Workers' families are offered testing and treatment too. The programme is now expanding from the workplace to clinics in towns and villages near mines, in partnership with loveLife, an AIDS charity.

Making a difference

Such a huge programme is affordable in the mining industry, where in-house hospitals and medical programmes have long been the norm. If few other industries can afford to imitate this fully, they can do the basics, says Mr Brink. He recently advised the boss of a small Johannesburg roofing firm, with 150 workers, on a two-step HIV programme: offer workers confidential and easy-to-administer HIV tests (simple oral swabs are now used; 15 workers turned out to be infected); then offer anti-retroviral drugs. The roofing firm had no funds for medical spending, but a nearby clinic promptly agreed to give free treatment.

It is crucial to identify AIDS as a threat early, rather than wait for problems to emerge, says Mr Brink. Planning requires good data about a firm's workers, their productivity, and how often and why they are absent. Once a decision is made to act, someone important (ideally the boss) should take the lead. Anglo American is a conglomerate of mining businesses in gold, platinum, coal and much else. Mr Brink advises each business, and has found that the quality of response has varied sharply with the quality of the business unit's leader. At the level of mine managers, the least effective at fighting the disease are also least productive. The best managers have persuaded some 86% of their staff to take an HIV test each year—and they also generate the best output, profits, and union relations.

Slowly, firms elsewhere are coming to study corporate South Africa's response. Mr Brink has doled out advice in India, though he meets constant denial there that AIDS will ever be a business problem—an attitude eerily reminiscent of that once common in South Africa. A Malaysian business group recently sent a delegation to South Africa to study AIDS strategies; business leaders from other parts of Africa also visit often. Such fact-finding missions seem certain to increase as HIV spreads. Sadly, Mr Brink is likely to become even busier.

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The future of the dollar

The passing of the buck?

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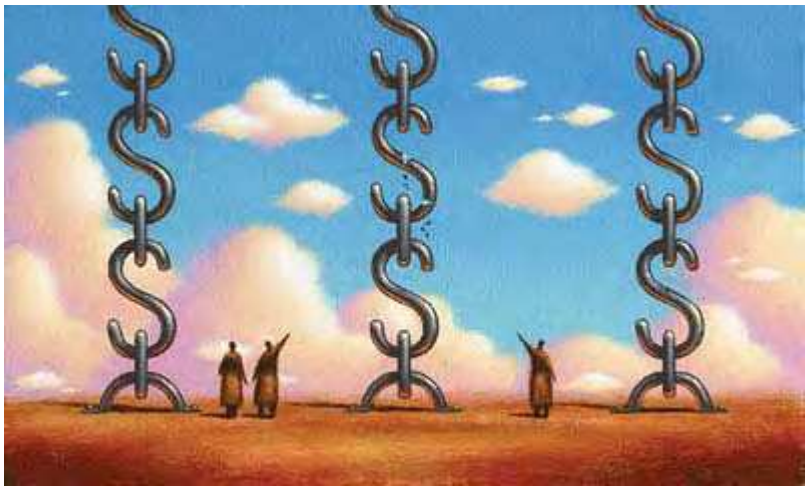


America's policies are putting at risk the dollar's role as the world's dominant international currency

Get article background

FORECASTING exchange rates is an inexact business. As Alan Greenspan, the chairman of America's Federal Reserve, once said, the activity “has a success rate no better than that of forecasting the outcome of a coin toss.” Recent years have borne this out: most currency forecasters would actually have done better if they had simply tossed a coin—at least they would have been half right. Yet over the next few years it seems an excellent bet that there will be a large drop in the dollar.

Since mid-October the dollar has fallen by around 7% against the other main currencies, hitting a new all-time low against the euro and a five-year low against the yen. The dollar has lost a total of 35% against the euro since early 2002; but it has fallen by a more modest 17% against a broad basket of currencies, including the Chinese yuan, which is pegged to the greenback. The dollar wobbled badly this week, having fallen for five successive days after Mr Greenspan said that America's current-account deficit was unsustainable because foreigners would eventually lose their appetite for more dollar-denominated assets.

Mr Greenspan may not be the only central banker to have become bearish on the dollar. Markets have been rattled by concerns that foreign central banks might reduce their holdings of American Treasury bonds. Last week, officials at the central banks of both Russia and Indonesia said that their banks were considering reducing the share of dollars in their reserves. Even more alarming were reports that China's central bank, the second-biggest holder (after Japan) of foreign-exchange reserves, may have trimmed its purchases of American Treasury bonds.

This combination of events has led some economists to ponder the once unthinkable: might the dollar lose its reserve-currency status? Over the past 2,000 years, the leading international currency has changed many times, from the Roman denarius via the Byzantine solidus to the Dutch guilder and then to sterling. The dollar has been the dominant reserve currency for more than 60 years, delivering big economic benefits for America, which can pay for imports and borrow in domestic currency and at low interest costs.

The dollar's share of global foreign-exchange reserves has already fallen from 80% in the mid-1970s to

around 65% today. And yet does the dollar really risk losing its status as the world's main currency? The same question was asked in the early 1990s after the dollar's previous long slide, but the dollar's pre-eminence survived. Then, however, there was no alternative to the dollar. Today the euro exists, and could yet emerge as a rival to the greenback.

The requirements of a reserve currency are a large economy, open and deep financial markets, low inflation and confidence in the value of the currency. At current exchange rates the euro area's economy is not that much smaller than America's; the euro area is also the world's biggest exporter; and since the creation of the single currency, European financial markets have become deeper and more liquid. It is true that the euro area has had slower real GDP growth than America. But in dollar terms the euro area's economic weight has actually grown relative to America's over the past five years.

Where the dollar has failed is as a store of value. Since 1960 the dollar has fallen by around two-thirds against the euro (using Germany's currency as a proxy before 1999) and the yen (see chart 1). The euro area, unlike America, is a net creditor. Never before has the guardian of the world's main reserve currency been its biggest net debtor. And a debtor may be tempted to use devaluation to reduce its external deficit—hardly a desirable property for a reserve currency.

Those bearish on the dollar are asking why investors will want to hold the assets of a country that has, by its own actions, jeopardised its reserve-currency position. And, they point out, without the intervention of central banks, which have been huge net buyers of dollars, the dollar would already be lower. If those same central banks were to begin to sell some of their $2.3 trillion dollar assets, then there would be a risk of a collapse in the dollar. However you look at it, America is likely to find it increasingly hard to finance its huge current-account deficit.

The deficit is at the heart of this issue. Various economists have put forward at least four arguments why the deficit does not matter and the dollar's reserve status is safe. First, the deficit is a sign of America's economic might, not a symptom of weakness. Second, sluggish demand overseas is a big cause of the deficit, so it is reversible. Third, the deficit exists largely because of multinationals' overseas subsidiaries. And fourth, central-bank demand for dollars creates, in effect, a stable economic system. It is not difficult to demolish each argument in turn.

Why the deficit matters

Start with the first argument, which has been favoured by America's Treasury. Foreigners want to invest in America, it is claimed, because it offers higher returns than Europe or Japan; and if America runs a capital-account surplus, it must by definition run a current-account deficit. There may have been some truth to this argument in the late 1990s, when America enjoyed large net inflows of direct and equity investment, but over the past year or so, there has actually been a net outflow from America of such long-term investment. Moreover, in the past few years America has had lower returns on foreign direct investment, equities and bonds than Europe or Japan.

The current-account deficit is now being financed by foreign central banks and short-term money. In the year to mid-2004, foreign central banks financed as much as three-fifths of America's deficit. The recent purchase of reserves by central banks is unprecedented. Global foreign-exchange reserves (65%, remember, are denominated in dollars) have risen by $1 trillion in just 18 months. The previous addition of $1 trillion to official reserves took a decade. These purchases of dollars have nothing to do with the prospective returns in America, but are aimed at holding down the currencies of the purchasing countries.

Worse still, in recent years capital inflows into America have been financing not productive investment (which would boost future income) but a consumer-spending binge and a growing budget deficit. A current-account deficit that reflects a lack of saving is hardly a sign of strength.

What about the second argument, that sluggish demand in the rest of the world is to blame for America's

external deficit? If only Europe and Asia would save less, spend more and so import more from America, it is argued, the deficit would simply vanish. Martin Barnes, an economist at the Bank Credit Analyst, a Canadian investment-research firm, reckons that this is much exaggerated*. In 2001, when domestic demand did grow slightly faster in Europe and Japan than in America, America's deficit barely budged.

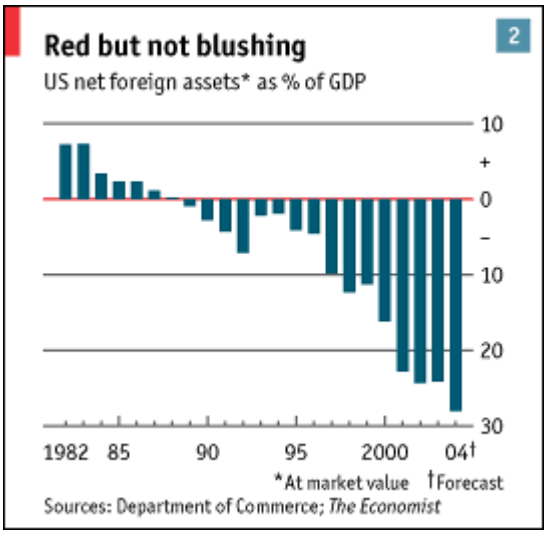
The problem is that America's imports are 50% bigger than its exports, so if exports and imports simply grow at the same pace, the trade deficit automatically widens. If imports rise by, say 10%, then exports need to grow by 15% just to prevent the deficit from widening. This means that while stronger foreign demand would undoubtedly help, it would be virtually impossible for America to reduce its deficit significantly through stronger exports alone. Li Ruogu, the deputy governor of the People's Bank of China, said last week that America should put its own house in order—ie, save more—and stop blaming others for its problems. He was right.

The third argument is that fretting about the current-account deficit is outmoded because a large slice of the deficit reflects transactions between American multinationals and their foreign subsidiaries. Thus, it is claimed, importing an IBM computer from China is not the same as importing a Toshiba from Japan. Outsourcing by American firms boosts their profits. The problem with this argument, as Mr Barnes points out, is that the total trade between multinationals and their foreign subsidiaries still creates a deficit even allowing for the return of profits and dividends, and this gap must still be financed by borrowing from abroad.

Last, but not least, last summer's favourite explanation of why America's deficit is not a problem is the notion that the world now enjoys the equivalent of the Bretton Woods system (the system of fixed exchange rates after the second world war), in which Asian governments happily buy the Treasury bonds that finance America's deficit in order to maintain cheap currencies to support their own export-led growth. In turn, Asia's purchases of bonds hold down interest rates in America, and so support consumer spending and imports. This cycle, it has been argued, could last another decade.

One big difference is that under the original Bretton Woods system America ran a current-account surplus and the value of the dollar was officially pegged to gold. No wonder, perhaps, that today's "system" is already starting to creak as some Asian central banks start to worry about the value of their dollar reserves. To sustain the current arrangement, they will have to keep buying more and more dollars as America's current-account deficit widens. Asian central banks are already exposed to enormous potential losses in local-currency terms should their currencies appreciate against the dollar. It would be prudent for them to diversify their reserves, but that could send the dollar tumbling. Larry Summers, a Treasury secretary under President Clinton, calls this the "balance of financial terror": in effect, America relies on the costs to Asian central banks of not financing its deficit as assurance that financing will continue indefinitely.

For almost two decades, economists have worried about America's current-account deficit and predicted a plunge in the dollar and a hard landing for the economy. The dollar did indeed fall sharply in the late 1980s, but with few ill effects on the economy. So why worry more now? One good reason is that the current-account deficit, currently running at close to 6% of GDP, is almost twice as big as at its peak in the late 1980s, and on current policies it will keep widening. Second, in the 1980s America was still a net foreign creditor. Today it has net foreign liabilities and these are expected to reach $3.3 trillion, or 28% of GDP, by the end of 2004 (see chart 2).



Some economies, such as Australia and New Zealand, have built up bigger debt ratios without obvious adverse economic consequences, but they are small countries so their current-account deficits absorb only a tiny fraction of global saving. This year alone, America's new borrowing from abroad will mop up a massive 75% of the world's surplus saving.

So far America's hefty debt has not been a burden on its economy, mainly because it has pulled off an extraordinary trick. Although it is a large net debtor, it does not have to make net payments of interest and dividends to the rest of the world. Instead, America still enjoys a net inflow of investment income because it earns a higher average return on its foreign assets than it pays on its liabilities. Returns on foreign direct investment and equities are higher abroad than at home, and America has benefited from unusually low interest rates on its borrowing in recent years. Unlike in previous periods of dollar decline,

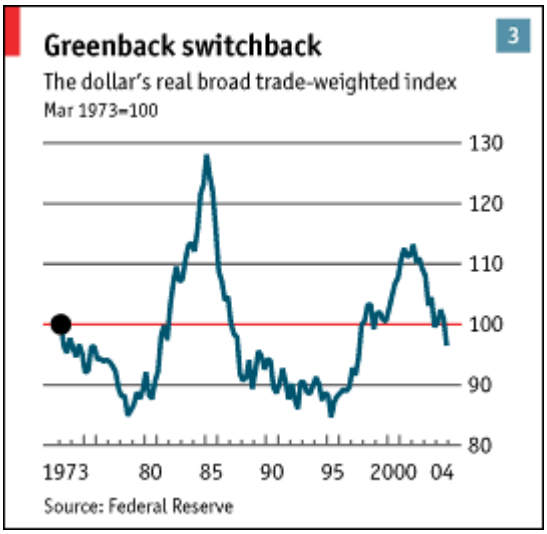
bond yields have remained low—largely thanks to those huge purchases by foreign central banks. But as interest rates rise in future and net foreign debt mounts, America's net investment income is likely to turn negative, probably next year. Not only will that swell its current-account deficit, but it will also exert an increasing drag on the economy.

America has enjoyed another huge advantage in its ability to borrow in its own currency. A normal debtor country, such as Argentina, has to borrow in foreign currency, so while a devaluation will help to reduce its trade deficit, it will also increase the local currency value of its debt. In contrast, foreign creditors carry the currency risk on America's $11 trillion-worth of gross liabilities. Its net foreign investment position actually improves as the dollar declines, because this boosts the dollar value of overseas assets. This makes devaluation an attractive option for America.

The dollar's position as the world's main reserve currency allows it to attract finance on exceptionally favourable terms. However, this is a mixed blessing. It encourages America to borrow excessively, which increases the eventual cost of adjustment. The issue is not whether America can afford to take on more debt, but whether the rising debt burden will make investors less willing to finance future deficits at current exchange and interest rates.

A recent paper† by Nouriel Roubini, of New York University, and Brad Setser, of Oxford University, estimates that, if the real trade-weighted value of the dollar remains close to its average in 1990-2003 (slightly above current levels) and there is no change in domestic policy, America's current-account deficit would rise to 8% of GDP in 2008, and its net debt would increase to over 50% of GDP. In practice, such levels are unlikely to be reached because private investors would be unwilling to finance debts of that size without much higher interest rates and/or a lower dollar, both of which would help to shrink the current-account deficit.

Despite its recent drop, the dollar is far from cheap. After adjusting for inflation differentials, the dollar's real trade-weighted value against a broad basket of currencies is close to its average level over the past 30 years. Although it has barely fallen against most emerging-market currencies, the greenback is already below most estimates of its “fair value” against the euro. But that should be no surprise. Typically, a currency needs to undershoot its fair value by a wide margin in order to reduce a country's large external deficit. The real broad trade-weighted dollar has so far fallen by only 15% since early 2002, compared with a drop of 34% from its peak in 1985 (see chart 3). Yet America's current-account deficit is much bigger today than in the 1980s, so the dollar is likely to fall more sharply. Some economists reckon that it needs to fall by at least another 30%. That would imply a rate of over $1.80 for one euro, compared with today's $1.33.



The less the dollar falls against emerging-market currencies, such as the Chinese yuan, the more it is likely to drop against the euro. China accounts for one-quarter of America's total trade deficit. Speculation has mounted in recent weeks that the yuan will soon be revalued against the dollar. But Beijing has indicated that it will not be rushed into changing its exchange rate, especially if pressured by America.

In any case, the current-account deficit cannot be corrected by a fall in the dollar alone: domestic saving also needs to rise. The best way would be for the government to cut its budget deficit. That would reduce America's need to borrow from abroad, and so mitigate the fall in the dollar and rise in bond yields that will otherwise be demanded by investors. If combined with stronger growth abroad, then the current-account deficit could slowly shrink. America's growth would be depressed by tax increases or spending cuts, but there would be no need for recession. If, on the other hand, the government fails to cut its budget deficit, the dollar will fall more sharply and bond yields will rise. America's housing bubble might then burst and consumer spending would certainly slow sharply. That combination would reduce the external deficit, but only at the cost of a deep recession.

A history lesson

In 1913, at the height of its empire, Britain was the world's biggest creditor. Within 40 years, after two

costly world wars and economic mismanagement, it became a net debtor and the dollar usurped sterling's role. Dislodging an incumbent currency can take years. Sterling maintained a central international role for at least half a century after America's GDP overtook Britain's at the end of the 19th century. But it did eventually lose that status.

If America continues on its current profligate path, the dollar is likely to suffer a similar fate. But in future no one currency, such as the euro, is likely to take over. Instead, the world might drift towards a multiple reserve-currency system shared among the dollar, the euro and the yen (or indeed the yuan at some time in the future). That still implies a big drop in the long-term share of dollar assets in central banks' vaults and private portfolios. A slow, steady shift out of dollars could perhaps be handled. But if America continues to show such neglect of its own currency, then a fast-falling dollar and rising American interest rates would result. It will be how far and how fast the dollar falls that determines the future for America's economy and the world's. Not even Mr Greenspan can forecast that.

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*"Re-assessing the Dollar Outlook" by Martin Barnes, *The Bank Credit Analyst*, December 2004.

† "The US as a Net Debtor: The Sustainability of the US External Imbalances".

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About sponsorship

Oil

Getting a grip

Dec 2nd 2004
From The Economist print edition

Alamy

The oil market has cooled recently, but will OPEC, which meets next week, try to turn up the heat again?

Get article background

“HISTORICALLY, OPEC is in its best position ever.” So declared Iran's president, Mohammed Khatami, before he met Venezuela's president, Hugo Chávez, this week. Mr Chávez agreed, and vowed to “defend” today's oil price of around $50 a barrel when OPEC, the Organisation of Petroleum Exporting Countries, holds its next meeting, in Cairo on December 10th. One Iranian oil official said this week that $50-70 was “not really a high price”.

This is not what consumers want to hear. Oil prices have shot up from around $10 a barrel in 1998 to their current heights, with predictable consequences at the petrol pump. Yet talk of higher oil prices may sound odd just now, because lately the market has gone off the boil. The price of West Texas Intermediate has cooled from $55 in mid-October to $45-50. And there are other signs that could mean prices fall further if OPEC does not try to support them by agreeing on a cut in members' production quotas next week.

For a start, the market seems well supplied, despite earlier concerns about a lack of supply. In its most recent report, the International Energy Agency says that market conditions should ease during the northern hemisphere's winter, although this is when demand peaks. It appears that inventories are not as depleted as some had feared. Prices eased on December 1st when America's Department of Energy reported that stocks of distillate fuel, which includes heating oil, were 2% up on the previous week, well above expectations.

What is more, demand seems to be easing. China's surge in oil consumption appears to be slowing. The OECD's *Economic Outlook*, published this week, concluded that high oil prices have started to act as a short-term drag on the global economy—which ought in turn to weigh on oil demand. In any case, demand slows in the second quarter of the year, with the change of the seasons.

Knowing that supply does not adjust immediately to demand—it takes six weeks for tankers from the Gulf to reach America—OPEC may have to act soon if it wants to keep prices up. Michael Lynch of Strategic Energy & Economic Research, a consultancy, insists that the market is turning. Speculators, he says, are having to grasp at straws to rationalise being long in oil. “By OPEC's meeting, a quota reduction

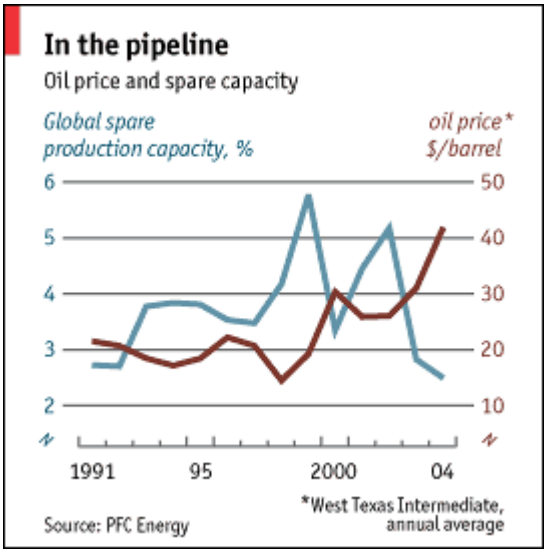
should be on the agenda."

As ever, the key to OPEC's behaviour will be Saudi Arabia, by far the cartel's biggest producer. Will it side with the hawkish Iranians in pushing for a quota cut? Ali Naimi, Saudi Arabia's oil minister, sounds satisfied with the market as it is. "The market today is in balance," he said recently. "Supply is a little ahead of demand...inventories are building comfortably."

Yet Mr Naimi's words leave room for a quota cut, and it is possible that the Saudis will endorse one. It they do, one reason will be the memory of the price collapse of six years ago. Then, ministers mistakenly increased output just as South-East Asia was sinking into its financial crisis, and prices plunged to $10 a barrel. Some members have been unsettled by OPEC's attempts to loosen the market when prices rose sharply earlier this year, and want quota cuts now despite the $50 price. This year's market-cooling efforts were futile because OPEC lacks spare capacity. Today, because weakening demand is leading prices lower, the cartel is regaining influence over the market. It can now cut output to prop prices up.

There is another reason why OPEC might cut quotas: many members believe that prices are high today not because of high demand or short supply but because of rampant speculation by hedge funds and others, who may yet stampede out of the market. Mr Naimi estimates that as much as $10-15 a barrel of the current price is due to a "fear premium" arising from concerns about supply disruptions. So far, oil-price bears point out, the world has been spared large-scale attacks.

At this, oil-market bulls shake their heads. The world is an increasingly dangerous place, they say, and nowhere more so than in the places that oil comes from. Though it is possible that prices could slide, the opposite is every bit as likely: prices could even top $100 if supply were seriously disrupted. And there is no shortage of possible sources of trouble. Iraqi elections are coming up, and insurgents are targeting oil pipelines. Venezuela and Nigeria are unreliable, owing to civil strife. And Russia's crackdown on Yukos goes on.



The biggest fears of disruption arise from Saudi Arabia itself. A thoughtful report published this week by the Centre for Strategic and International Studies, an American think-tank, concludes that although the Saudis have taken important steps to strengthen security in recent months, the country remains vulnerable.

As well as the fear factor, oil bulls point to the fact that spare production capacity has dwindled and is close to 20-year lows. This is worrying, because there is a strong inverse correlation between spare capacity and prices (see chart). Almost all the world's spare capacity lies in Saudi Arabia. Although the Saudis recently announced a dramatic expansion plan for their oil industry and there is evidence of expansion already, sceptics believe that they (and other OPEC countries) will keep spare capacity to a minimum, to enjoy higher prices.

There are other reasons to think the oil price will stay strong. Paul Horsnell of Barclays Capital, an investment bank, claims that the rise in oil prices over the past two years "reflects structural rather than cyclical issues." One cause is that the bloated and growing welfare states of many oil economies require ever higher oil prices to sustain them. Another is that global demand—especially in emerging giants like China—appears to be less sensitive to price increases than previously thought.

Mr Horsnell also thinks the stagnation of oil output from non-OPEC countries will lift the long-term price. Indeed, western oil companies are finding it harder and costlier to develop new fields in West Africa, the Caspian Sea and the deep oceans. Mr Naimi observes that a price of $30 to $34 may be needed to meet rising exploration and production costs in such risky places. Economists at the OECD forecast that the price is likely to be around $35 a barrel (in 2000 dollars) in 2030, compared with only $27 a barrel last year. They point out that higher growth than in their basic assumptions, especially in China, could mean a much higher price.

So what are OPEC ministers to do in Cairo? If they do nothing, and the winter proves to be mild, they risk oversupply and a price collapse. If they cut too much, and winter turns ugly, they risk runaway prices. They could probably live with the anger of western countries, but if the world were tipped into recession, then OPEC would suffer too.

Maybe the Saudis will succeed in stabilising prices around a new plateau, perhaps the $30-34 range of which Mr Naimi spoke, maybe higher. The trouble is that the relative price stability, between $20 and $30, of much of the late 1980s and 1990s was due in large part to OPEC's then huge spare capacity. That is now gone, and any Saudi expansion will take time.

Where oil prices will go, not even OPEC knows. For now, volatility looks a fair bet. European Union ministers recently decried the oil price's unnerving gyrations as an unwanted “yo-yo”. They had better get ready for more ups and downs.

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Gold

Burnished

Dec 2nd 2004
From The Economist print edition

Up goes gold, down goes the dollar

Get article background

MOST economists hate gold. Not, you understand, that they would turn up their noses at a bar or two. But they find the reverence in which many hold the metal almost irrational. That it was used as money for millennia is irrelevant: it isn't any more. Modern money takes the form of paper or, more often, electronic data. To economists, gold is now just another commodity.

So why is its price soaring? Over the past week, this has topped $450 a troy ounce, up by 9% since the beginning of the year and 77% since April 2001. Ah, comes the reply, gold transactions are denominated in dollars, and the rise in the price simply reflects the dollar's fall in terms of other currencies, especially the euro, against which it hit a new low this week. Expressed in euros, the gold price has moved much less.

However, there is no iron link, as it were, between the value of the dollar and the value of gold. A rising price of gold, like that of anything else, can reflect an increase in demand as well as a depreciation of its unit of account.

This is where gold bulls come in. The fall in the dollar is important, but mainly because as a store of value the dollar stinks. With a few longish rallies, the greenback has been on a downward trend since it came off the gold standard in 1971. Now it is suffering one of its sharper declines. At the margin, extra demand has come from those who think dollars—indeed any money backed by nothing more than promises to keep inflation low—a decidedly risky investment, mainly because America, with the world's reserve currency, has been able to create and borrow so many of them. The least painful way of repaying those dollars is to make them worth less.

The striking exception to this extra demand comes from central banks, which would like to sell some of the gold they already have. As a legacy of the days when their currencies were backed by the metal, central banks still hold one-fifth of the world's gold. Last month the Bank of France said it would sell 500 tonnes in coming years. But big sales by central banks can cause the price to plunge—as when the Bank of England sold 395 tonnes between 1999 and 2002. The result was an agreement between central banks

to co-ordinate and limit future sales.

If the price of gold marches higher, this agreement will presumably be ripped up, although a dollar crisis might make central banks think twice about switching into paper money. Will the overhang of central-bank gold drag the price down again? Not necessarily. As James Grant, gold bug and publisher of *Grant's Interest Rate Observer*, a newsletter, points out, in recent years the huge glut of government debt has not stopped a sharp rise in its price.

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CalPERS

An activist ousted

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Will the departure of its president hush America's largest, most outspoken public pension fund?

LOUD and messy departures for high officials are getting to be a Californian speciality. On December 1st the president of the California Public Employees Retirement System (CalPERS), America's largest public pension fund, with $177 billion in its care on behalf of 1.4m members, was voted off the fund's board. Sean Harrigan, a union official, has headed CalPERS since February 2003. Under him, it has championed efforts to clamp down on exorbitant executive pay, auditors' conflicts of interest and much else in companies in which it has stakes. Business groups are delighted at his fall. The state's Personnel Board, which rescinded Mr Harrigan's appointment, replaced him with a Republican.

Mr Harrigan claims that California's Republican governor, Arnold Schwarzenegger, teamed up with business interests to force him out. The governor's office stoutly denies such “conspiracy” theories, and points out that Mr Schwarzenegger has appointed only one of the five members of the Personnel Board. However, that has not silenced speculation in Sacramento, the state capital, and observers note that tussles with governors are hardly new: in 1991 Pete Wilson tried to seize control of CalPERS by rejigging the way board members were appointed. He failed, after Democrats and unions cried foul; but the fund temporarily softened nonetheless.

Mr Harrigan has certainly slipped up. The trouble is not CalPERS's activism as such. Since the 1980s, the fund has been agitating for improved corporate governance. It has homed in on deficiencies such as the use of poison pills to prevent takeovers and shareholders' inability to nominate directors to corporate boards. The cause is a worthy one, and other large state pension funds have followed CalPERS's lead, albeit more quietly.

Critics say that Mr Harrigan has overreached, and turned CalPERS—whose 13-member board is heavily Democratic—into a tool of leftist politics and unions, thus diluting its effectiveness. For instance, it was plainly a mistake to vote against the reappointment of Warren Buffett, an investment guru, to the board of Coca-Cola. Mr Harrigan's complaint was that Mr Buffett sat on Coke's audit committee and so was responsible for allowing the company's auditors to perform non-audit tasks. Other shareholders thought it absurd to oppose Mr Buffett—a good-governance advocate regarded as a hero by investors in his own company, Berkshire Hathaway—and voted overwhelmingly in his favour.

Mr Harrigan's links to unions (shared, incidentally, by several other CalPERS board members) have also come under fire. Besides heading CalPERS, he served as executive director of the regional branch of the Food and Commercial Workers International Union. That union was at the centre of a strike a year ago by workers at Safeway, a grocery chain. CalPERS, under Mr Harrigan, resolutely supported the unions and tried, without success, to get the head of Safeway fired. Businesses seized on this: activism, they said, had been twisted into backing for unions.

Mr Harrigan retains wide support among outside activists. Several big pensioner and consumer groups wrote to the Personnel Board on his behalf. Within CalPERS, though, Mr Harrigan is said to have deepened the gulf between the largely Democratic board and fund officials. Many of these are focused on optimising investment returns rather than championing every governance issue. Some fellow activists also complain that CalPERS has taken to throwing its weight around, and wrecked good-governance initiatives by poor diplomacy. They say that Mr Harrigan's hard line on shareholder proxy voting reforms helped cause the Securities and Exchange Commission, which had been prepared to back moderate changes allowing shareholders some rights in nominating directors, not to follow through with its plans.

What is next for CalPERS? Mr Harrigan says that his departure will not reduce the fund's “commitment”.

Steve Westly, the state controller and a moderate member of the CalPERS board, has vowed that the fund will continue to lead battles for corporate-governance reform. CalPERS will not break a 20-year habit.

Still, the fund may pick its battles more carefully. A few weeks ago the board agreed to reform proposals introduced by Mr Westly. They call for the fund to withhold proxy votes only for directors with the worst records on matters such as executive pay. The idea is supposed to make CalPERS, which currently withholds at least four-fifths of all its proxy votes, more discriminating in its targets. The composition of the CalPERS board may also change if Mr Schwarzenegger tries to manoeuvre more moderates on to the board. CalPERS will also need to pick a new president at a meeting on February 16th, if not before.

Other big public pension funds, though less politicised than CalPERS, are watching with interest. Many believe that, despite Mr Harrigan's blundering and lack of tact, his ousting represents a coup for opponents of reform. Nevertheless, perhaps Mr Harrigan himself ought not to complain too much: he has been snared by the same demand for accountability that he issued to so many corporate directors.

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Emerging-market debt

What crisis?

Dec 2nd 2004
From The Economist print edition

The events in Ukraine have barely dented emerging debt markets

UKRAINE is not usually at the top of bond traders' watch lists. The country is a relatively small issuer of debt, and trading in its debt is pretty thin. Traders are far more likely to train their gaze on the sunnier shores of Brazil, a bellwether for emerging-market debt. But Ukraine's political crisis, in the wake of its contested presidential election last month, has been noted. With the business of government in turmoil and the central bank worrying about a run on the banks, traders have concluded that the events in Kiev do not augur well for Ukraine's ability to repay its debts.

Yield spreads between the most liquid Ukrainian paper and American Treasuries have widened by nearly 100 basis points (hundredths of a percentage point) since the election on November 21st (see chart). For the unlucky holders of the country's hryvnia-denominated VAT-backed bonds, exotic stuff by any measure, the damage is worse: yields have risen by roughly 300 basis points.

None of this, however, adds up to panic. Indeed, the markets' reaction shows how sanguine investors in emerging-market debt have become. Partly, this is entirely sensible. There has been barely a sign that Ukraine's sneeze has given anyone else a cold. Contagion was plain to see in South-East Asia in 1997, Russia in 1998 and other emerging-market debacles. Investors now seem to be better than they were at telling economies apart rather than thinking of them as a group.

That said, there are observers who discern an impact on Ukraine's neighbours. Spreads on Russian debt, which yields less than 250 basis points more than Treasuries, have ticked up since Ukraine's election. Some, making a less obvious connection, think that Turkish debt prices may have fallen slightly in response to the woes on the other side of the Black Sea.

Overall, though, trading in emerging-market debt remains remarkably buoyant. J.P. Morgan's EMBI+ index of such debt yields barely more than 350 basis points over American government bonds. And bonds of many other emerging economies have prospered in recent days. Even as the price of Ukrainian debt was flagging, punters were bidding up the prices of Brazilian sovereigns and other Latin American paper.

By any measure, emerging-market debt is astonishingly dear. So hungry are investors for yield, given the pathetic returns on American Treasuries and other rich-world sovereigns, that they have bid up emerging-market paper a long, long way.

Any future emerging-market storm is as likely to start in America as anywhere else. The yield on ten-year Treasuries rose to a four-month high this week. As the dollar falls and worries persist over the sustainability of the country's twin deficits, few would be surprised by further increases in yields on American Treasury bonds. When Treasury prices last plunged, earlier in the year, emerging-market investors were savaged. Traders would do well to keep an eye on America.

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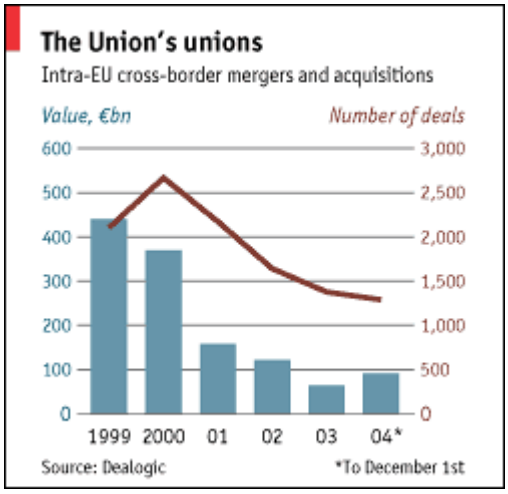
Cross-border deals in the European Union

Merger muddle

Dec 2nd 2004 | PARIS
From The Economist print edition

At last, ministers reach a compromise on cross-border merger rules

Get article background



"IT IS high time it was put right," said Charlie McCreevy, the new European commissioner for the single market. Indeed. After 20 years of talks, drafts, objections and waterings-down, on November 25th ministers from European Union countries finally approved a directive on cross-border mergers. The directive must be approved by the European Parliament before coming into force.

Europe needs a law on cross-border deals, says the European Commission, because unbridgeable differences in national laws make transnational mergers with companies in Austria, Denmark, Finland, Germany, Greece, Ireland, the Netherlands and Sweden impossible. Acquiring firms have to resort to creating new subsidiaries in these countries or complex holding structures. This is costly and inefficient.

The wrangling over the directive shows how hard it is proving to complete Europe's much-vaunted single market. Until now Germany, in particular, has thwarted attempts to make cross-border mergers easier. The main stumbling block in the protracted negotiations was Germany's system of *Mitbestimmung* (co-determination), which gives its workers more influence in the running of companies than any others in the EU. Employees' representatives make up one-third of the supervisory boards of German firms with more than 500 employees, and a half in companies with more than 2,000. In some other countries one-third of board members may be workers' representatives. In Britain, Spain and Italy, employees have no say at all.

Because Germany would not budge on *Mitbestimmung*, the final version of the directive says, in effect, that after a merger involving a German company, German rules will apply: a merged entity will have to adopt co-determination if one-third or more of the workers are German. Business groups are grumbling, but they might have fared even worse. Barbara Mayer of Graf von Westphalen Bappert & Modest, a German law firm, points out that under the European company statute, which came into effect in October, the threshold is only 25% of the workforce. This law, which paved the way for the compromise on the cross-border merger directive, allows companies or subsidiaries from different EU countries to combine as a Societas Europea, a new legal form of company. Despite this innovation, many companies tying the knot are likely to prefer straightforward cross-border mergers to the hassle of adopting a new legal status.

German business is especially unhappy with the directive. Last month national bosses' federations published a proposal to weaken co-determination. "The directive is a catastrophe," says Jan Wulfetange, of the BDI, one of these groups. Foreigners will shy away from a merger with German firms, just when the country's industry is in dire need of consolidation.

However, the final agreement on the directive smacks of more than just German intransigence. There was the usual Brussels horse-trading too. Britain went along with the compromise in exchange for help in its battle against a directive that would give more rights to temporary workers. France's price was backing for its fight for subsidies for farmers.

The directive is supposed to be approved by European parliamentarians by the summer. German unions,

who think the directive does not go far enough in protecting co-determination, hope that socialist deputies will defeat the new law. However, Klaus-Heiner Lehne, a German Christian Democrat (centre-right) MEP, is confident that it will pass. Meanwhile, Europe's business lobbies are pondering the directive with mixed feelings. After years of stalemate, says David Coleman of UNICE, a pro-business lobby group in Brussels, at least there is progress.

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Economics focus

Trade's bounty

Dec 2nd 2004
From The Economist print edition

A new study estimates America's gains from past and future global integration

SOME of those who are sceptical about globalisation concede that rich countries, at least, gain from it. But many Americans, on recent evidence, seem unconvinced. “Offshoring”, the use of poor-country labour to drive down costs, worried many voters during the recent presidential campaign. Congress has taken a protectionist turn in recent years. George Bush, who fancies himself a free-trader, has backed egregious protection of America's farmers and steelmakers. A new paper*, by Scott Bradford, Paul Grieco and Gary Hufbauer, of the Institute for International Economics in Washington, DC, can help set them all straight. It surveys the evidence and puts a dollar figure on America's past and prospective gains from trade.

That is no easy task, because trade can affect an economy in many ways. There is the traditional route of comparative advantage: by specialising in ways that exploit differences in productivity and resources, countries can use trade to consume more than they could in commercial isolation. Economies of scale are also important: by gaining access to bigger markets, firms can spread fixed costs over more output. Trade also helps to diffuse the best production technologies around the world. Imports benefit consumers by providing a wider and cheaper variety of goods and by inducing competition that spurs productivity.

Not surprisingly, the authors are unable to distinguish the effects of pro-trade policies—notably, the eight completed global trade rounds since the second world war—from those of the mostly serendipitous improvements in, say, transport and telecoms that have also made trade easier. They draw on several approaches to estimate the total effect, because any single study is bound to be imprecise.

One method is to look at macroeconomic models of the effects of trade over time. The OECD has recently studied the impact of trade “exposure” on incomes per person in several countries. It concludes that trade accounted for 20% of the gain in America's GDP per person between 1950 and 2003.

Other techniques are more microeconomic, and try to add up the benefits to consumers and the gains to firms. A study cited by the authors suggests that, by bringing greater product variety, trade has boosted consumers' purchasing power by 2.8% of GDP, or $300 billion a year. On the corporate side, competition from abroad has induced changes in the mix of capital and labour and the incorporation of new technologies that raise productivity. Such “sorting and sifting” is reckoned to yield an additional 5.8% of GDP. Combine the benefits of greater product variety and the gains from sorting and sifting, and the total impact of trade is to raise the level of GDP by 8.6%.

A third approach is to consider a counterfactual: what if the wave of global trade liberalisation that began after the second world war had never taken place? One study estimates that a return to 1930s-style protectionism today would reduce America's GDP by 2.4%. If other countries retaliated with higher barriers of their own, GDP would fall by 2.1% more. Once again, consumers' lost product variety would have to be considered too. On this method, the total value of trade to America is put at 7.3% of GDP.

Taking the average of the estimates, the authors conclude that the American economy is roughly $1 trillion a year better off thanks to “global integration”. That means about $9,000 of extra income for each American household.

Since there has been so much liberalisation already, you might think there was little to gain from going further. The average American import tariff, after all, has fallen from 40% to 4% since the second world war: surely there is not much more to squeeze out? In fact, say the authors, the opposite is true: there is still plenty to be had.

Eyes on the prize

First, tariff measures are not the only measure of trade openness. Trade in many services, from finance to health care, remains highly restricted. Freeing services could yield even greater gains than continued liberalisation in manufactures and farm products. Second, although American tariffs have fallen, those in poor countries remain high. A third, more speculative, potential gain comes from the “commercial certainty” of liberalisation agreements. When firms can count on free trade, they can commit themselves to investments that raise incomes further.

Mr Bradford, Mr Grieco and Mr Hufbauer use the same techniques to glimpse the effects of future liberalisation. Clearly, there are huge margins of error, but the gains look big: anywhere from $450 billion to $1.3 trillion annually, if America concluded free-trade deals with all its trading partners. The authors think that this “final march” to freer trade could safely be expected to generate gains equivalent to about half of those already achieved, or around $4,500 per American household per year.

There are caveats. The authors do not analyse how the gains from trade have been or will be shared among rich and poor households. Nor do they estimate the number of households that are net losers from trade. But they think the total economic costs of trade-related job losses if America eliminated all trade barriers would amount at most to $54 billion, far less than the economic gains.

Crucially, this is a one-time cost. The benefits of trade, by contrast, accrue year after year as long as free-trade policies are in place. Because the benefits from trade are vastly bigger than the costs, the losers could in theory easily be compensated. America has already taken some steps towards turning this theory into practice. It can and should go much further.

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* “The Payoff to America from Global Integration”. Forthcoming in “The United States and the World Economy: Foreign Economic Policy for the Next Decade”, edited by Fred Bergsten, to be published in January by the Institute for International Economics

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Prosopagnosia

About face

Dec 2nd 2004
From The Economist print edition

Researchers are exploring how and where in the brain people recognise faces. This could be helpful to those who cannot recall them at all

RENÉ MAGRITTE, a surrealist artist, perfectly captured the idea of prosopagnosia, or face-blindness, in his painting “The Son of Man”. In the picture, an apple floats in front of a man's face, covering the features that would normally allow him to be recognised.

To people with prosopagnosia, the instant someone leaves their sight the memory of that person's face is blank—or, at best, a palette of muddled features. Face-blindness can be likened to tone-deafness: the tone can be heard, or the face seen, but distinguishing between different tones or faces is nearly impossible. The effects of prosopagnosia can be so bad that people with severe cases cannot recognise their own parents or children.

Understanding the face-recall mechanism in the brain would be a big step towards understanding this odd disorder. It might also throw light on human evolution, since the ability to recognise faces is more or less equal to the ability to recognise individuals, and that ability is the glue which holds societies together and which has enabled humanity to develop a complex culture unique in the animal kingdom. The question is whether this crucial ability has its own private brain mechanism, or whether it is simply one aspect of a general ability to recognise individual members of a particular class of objects.

Let's face it

A paper by Brad Duchaine and Ken Nakayama of Harvard University, which is to be published shortly in the *Journal of Cognitive Neuroscience*, uses face-blind volunteers to explore this question. In the study, Dr Duchaine and Dr Nakayama showed their seven face-blind subjects a series of images of cars, tools, guns, houses and landscapes, and also black-and-white pictures of faces without hair on their heads (prosopagnosiacs tend to use cues other than facial features to distinguish between people). Ten of these images were repeated during the cycle. The subjects were asked to indicate, as quickly as possible, whether each image they saw was new or repeated.

If, the researchers reasoned, visual recognition is done by one type of brain process regardless of what is

being recognised, then the face-blind subjects would show difficulty in recognising all repeated objects in the series, not just the faces. They found, however, that while none of their prosopagnosiac subjects could recognise the faces in the series well, they could distinguish between the other repeated pictures as easily as people without prosopagnosia could. That confirms the idea that faces are handled differently in the brain from other objects.

Further evidence supporting this idea comes from a study that Dr Duchaine and Dr Nakayama published earlier this year in *Neuron*. This reported the experience of a physicist known as Edward, who is severely face-blind. It was designed to test the idea that face recognition is a type of expertise that is learnt, in the same way that judges at dog shows, or connoisseurs of antiques, are trained to notice fine visual distinctions in their fields.

One way psychologists study the acquisition of such expertise is to use computer-generated images of objects known in the field as “greebles”. A greeble looks like a space alien. It has features that might be interpreted as limbs, sense organs and the like, and these features can be manipulated so that greeble families—of similar but not quite identical individual greebles—can be generated. Greeble training consists of recognising both the differences and the similarities.

As it turned out, Edward did well in greeble training, easily mastering the finer points of greeble anatomy. His ability to become an expert at appraising these objects showed that prosopagnosia is not caused by an inability to make fine distinctions between objects that are basically similar. Face-recognition, it suggests, is a specific skill that Edward simply lacks.

A third study, published in this week's *Neuron* by Galit Yovel and Nancy Kanwisher of the Massachusetts Institute of Technology, digs a little deeper into the question. Dr Yovel and Dr Kanwisher have been studying what happens in people's brains when they look at faces.

To do this, they used a brain-scanning technique called functional magnetic-resonance imaging, which follows the brain's activity in real time. Their area of particular interest was part of the brain called the fusiform face area (FFA), which previous work had suggested is involved in the recognition of objects, including faces.

Dr Yovel and Dr Kanwisher showed their subjects pictures of faces and houses, and measured the level of activity in the FFA. They found that it was far more active when someone was looking at a face rather than a house. They also found that the pattern of activity changed as they changed the pattern of features on a face. The FFA was the only part of the brain to respond this way, so it looks as though Dr Yovel and Dr Kanwisher have found the location of the face-processing mechanism. The next step will be to look at what happens there when prosopagnosiacs are presented with faces.

So, while science has yet to pin down what it is that people with prosopagnosia are missing when they recall a blur instead of a face—and therefore what allows everybody else to be so good at recognising one another—it is making good progress towards that goal. This is not to say that prosopagnosia has no advantages. As one person with it posts on her website, “You can wake up in the morning and pretend you don't know your kids. Then you don't have to pay them an allowance.”

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Puzzles

A hard, simple problem

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From The Economist print edition

Has an inventor found the hardest possible simple sliding-block puzzle?

Not as simple as it looks

SLIDING-BLOCK puzzles look easy, but they can be tricky to solve. The best known is the “15 Puzzle”, which became hugely popular in the late 1870s. This involves square tiles labelled with the numbers 1 to 15, which must be arranged in the correct order inside a four-by-four frame. Another popular one, called “Dad's Puzzle”, involves moving a large square tile from one corner to another, by rearranging other, smaller tiles around it—akin to moving a piano across a cluttered room.

The best such puzzles are easy to explain, yet difficult to solve. Historically, they have been devised by trial and error. But earlier this year, Jim Lewis, an inventor based in Midland Park, New Jersey, set out to find the hardest possible “simple” puzzle, using a computer-based search.

Mr Lewis's definition of “simple” was that the puzzle consist of up to three sorts of tile—one unit by one unit, one-by-two and two-by-two—and that the objective, as with Dad's Puzzle, should be to move one of the large tiles from one corner to another. He found that puzzles constrained within three-by-four and four-by-four frames were too easy to solve, but that anything larger than a four-by-five frame made the puzzle too complex. He then wrote a computer program to search through all possible puzzles within a four-by-five frame.

For each candidate puzzle, Mr Lewis's program calculated all the possible moves from the initial configuration, and then all possible moves from the resulting positions, and so on. In this way, it constructed a “solution tree” for each puzzle. The taller the tree, the more moves are required to get to the solution. The broader the tree, the more dead ends there are along the way.

Mr Lewis looked at the output of the program, and one puzzle leapt out: its solution tree was both tall and broad. At first, he found the puzzle insoluble, and assumed there was a bug in his program. But the program did work correctly, and the puzzle is indeed soluble. Mr Lewis claims that “Quzzle”, as he dubs his invention, is “the world's hardest simple sliding-block puzzle”. Within the terms of his particular definition of “simple”, he would seem to have succeeded.

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Security screening

Radio-too-active

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From The Economist print edition

Medical radiation is causing unexpected problems

OVER the past three years, the American government has deployed tens of thousands of detectors intended to look for those who might be up to no good with radioactive materials. Some of these detectors are fixed secretly near bridges, tunnels, rubbish dumps and shopping malls. Others are waved about conspicuously in the hands of security officials. The good news is that the devices seem to work. The bad news is that most of those covertly transporting radioactive substances turn out to be medical patients.

Medical procedures employing radiation are common these days: everything from positron-emission tomography (PET) scans to thyroid treatments use radioactive substances. Over 18m such procedures take place in America every year. But as the number of sensors grows and as their detection thresholds decline, more and more patients are being caught in the security net. Several recent incidents have been widely reported. One individual, who has Graves disease, a thyroid disorder, was strip-searched twice in three weeks on the New York subway. In another case, a radioactive passenger on his way to Atlantic City caused a busload of people to be searched by police. No one knows for sure how many people are being needlessly interrogated, but anecdote suggests the numbers are high.

Part of the problem is that little is known about which procedures leave detectable traces of radioactivity, and for how long that radioactivity persists in the body. So Lionel Zuckier, a radiology professor at the University of Medicine and Dentistry of New Jersey, decided to look into the question. He announced his findings earlier this week at the annual meeting of the Radiological Society of North America, in Chicago.

Dr Zuckier examined diagnostic tracers of the sort used in brain, bone and cardiac scans, and therapeutic radiopharmaceuticals, such as the iodine used to treat thyroid disorders. Using data about the half-lives of the substances involved, and estimates of the rates at which they are excreted by the body, he calculated the levels of radiation likely to be emitted by a patient following various sorts of procedure. Then he got his hands on five portable radiation detectors used by American law-enforcement agencies to see whether and for how long such levels were detectable from about one metre away.

Dr Zuckier found that people who have had a PET scan cease to be detectable as radioactive within a day. Those who have had their bones or thyroid glands scanned will be in the clear within about three days. To his surprise, patients who have undergone cardiac examinations using radioactive thallium continue to be hot for up to 30 days. And thyroid patients who have received iodine therapy have it worst. They are liable to trigger sensors for up to 95 days following their intervention.

Last year, America's Nuclear Regulatory Commission issued a notice urging hospitals to give patients a document to show to the authorities before they close in with the rubber gloves. Dr Zuckier supports the idea of patients carrying such official documentation. Special cards could outline when a procedure took place, how long radioactivity might last, and who to call to verify that the document is authentic. But practitioners of nuclear medicine who have tried furnishing their patients with such letters are jaded. They say the documents do not seem to help. Few security officials seem to understand the concept of medical radiation. And when they have called the Department of Homeland Security to discuss the problem, no one acknowledges that detectors even exist...

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Stress and ageing

If the cap fits

Dec 2nd 2004
From The Economist print edition

Chronic stress really does cause you to age faster

STRESS is among the vaguest but most insidious of ailments, and the mechanism of its action in the body has remained a mystery. Psychological stress has been shown to lead to poor health and a depressed immune system, but how? And why do people experiencing high levels of stress appear so haggard and aged? Elissa Epel, a researcher at the University of California, San Francisco, and her colleagues think they know the answer. And it is surprisingly obvious: stress appears to age you because it really does age you.

Body cells have age limits. They have caps called telomeres on the ends of their chromosomes, and these caps shorten after each cell division. Eventually, the telomeres become too short for division to occur again. When this happens the cell dies. This “limit to life” was first discovered in the 1960s by Leonard Hayflick, at the Wistar Institute in Philadelphia, and it has become known as the Hayflick limit.

What Dr Epel's work (which has just been published in the *Proceedings of the National Academy of Sciences*) shows is that the telomeres of women suffering chronic stress are shorter than those of unstressed women of the same chronological age. Moreover, there is an enzyme, telomerase, that rebuilds damaged telomeres. Its activity is reduced in stressed women. On top of this, oxidative stress, which causes DNA damage and is also thought to be a cause of physiological ageing, is increased in the chronically stressed. And to cap it all, the cells in which Dr Epel found this damage were immune-system cells called peripheral blood mononucleocytes. That helps to explain why stress is bad for the immune system.

Dr Epel's experimental subjects were 39 women who were caring for chronically ill children. She compared them with 19 “control” women who had healthy children. The level of stress experienced by these people was measured both subjectively (by a questionnaire) and objectively (by the duration of a child's illness). By both measures, the greater the stress, the greater the amount of premature shortening of the telomeres. The researchers estimate that the most stressed women lost around 550 DNA base pairs (the individual “letters” of the genetic code) per telomere. That is the equivalent of 9-17 years of normal cellular ageing. The haggard look of the chronically stressed immediately makes sense.

At this point there is one question that many people (not to mention cosmetics companies) will be thinking: can the effects of stress be reversed? This has also been the dream of a fringe of researchers working on ageing, who go further and ask if intervening in the process of cell division can extend the Hayflick limit—and thus extend lifespan.

Some previous work on the obese (who also suffer from premature shortening of the telomeres) suggests that losing weight can help telomere repair. But whether a similar thing happens in those who cease to be stressed has yet to be established. So Dr Epel and her colleagues now want to take measurements over a longer period, to assess the rate of telomere shortening relative to stress. They also want to look at other types of cells, such as those in the heart and lungs, since stress is known to increase the risk of cardiovascular disease.

If their work is confirmed, then it might be possible to develop drugs that pep up the activity of telomerase and regenerate the prematurely shortened telomeres. But the best bet at the moment is to reduce the amount of stress in the first place: perhaps by signing up to a yoga class.

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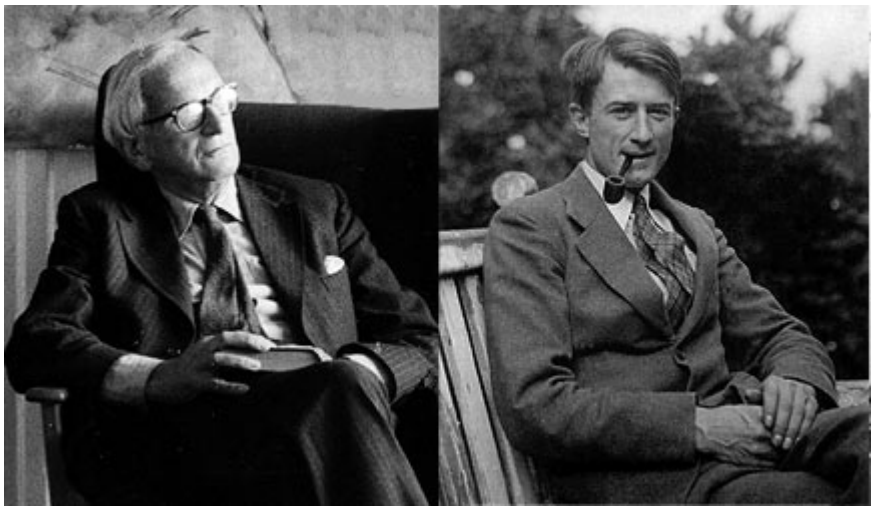
About sponsorship

Two English philosophers

Long shadows

Dec 2nd 2004
From The Economist print edition



In their different ways, defenders both of an open society

THOUGH not household names, each of these very different thinkers has a strong claim to have stamped modern politics with his ideas. As a legal philosopher at Oxford University, Herbert Hart (1907-92) provided arguments in depth for liberal views on punishment and morals. The abolition of hanging, the ending of censorship and the decriminalisation of homosexuality: all owe much to a body of opinion that Hart helped to fortify in mid-century Britain. Michael Oakeshott (1901-90), a professor of political science at the London School of Economics, was a profound and original conservative. An enemy of the welfare state, he had a vision of an open society held together by more than the individual pursuit of economic efficiency.

For her life of Hart, Professor Nicola Lacey of the London School of Economics had access to his letters and diaries. She also had many talks with his widow, Jenifer, who authorised this biography. Ms Lacey, an academic lawyer, gives roughly equal weight to Hart's work, to the Oxford milieu of the 1950s and 1960s in which “philosophy was the imperial discipline”, and to his complicated personal life. Hart's “The Concept of Law” (1961) revived thought about the nature of legal rules and the ultimate grounds for legal obligation. Clearly and accessibly, Ms Lacey outlines this book and his other main work.

An eminence who refused a knighthood, Hart was punishingly self-critical. Though widely admired and encircled by friends, he could be prickly with colleagues, especially his hand-picked Oxford successor, Ronald Dworkin. The grandson of Jewish immigrants, Hart was torn about his identity, Ms Lacey reports. His wife had many affairs, including with Isaiah Berlin. Caring for an autistic son made its own demands. A lifelong sufferer from anxiety and depression, in 1983 Hart underwent electro-shock therapy. On recovery he continued to work and write.

How Hart's private life bears on his work is a fair question. Ms Lacey sensibly avoids using one to explain the other. They ran in parallel without really touching,

A Life of H.L.A. Hart: The Nightmare and the Noble Dream
By Nicola Lacey

Oxford University Press; 422 pages; $35 and £25

Buy it at
Amazon.com
Amazon.co.uk

Michael Oakeshott: An Introduction
By Paul Franco

except, perhaps, in this respect. Hart's public role as a man of distinction was a constant strain: inside it was all doubt. So he told friends. If true, his achievement is the more remarkable—and makes defensible sense of a biographical approach that would otherwise feel intrusive.

Yale University Press; 209 pages; $30 and £27.50

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Paul Franco's study of Oakeshott's thought leaves his outwardly cheerful life on one side. Another biography promising to say more about Oakeshott's own complicated personal life—Jenifer Hart fell briefly in love with him too—is due soon. Mr Franco, a professor of government at Bowdoin College in Maine, paints a strictly intellectual portrait. In just over 200 pages he provides a commanding overview, setting Oakeshott in the context of other modern thinkers, including Hart. He outlines all the main works: “Experience and its Modes” (1933); Oakeshott's essays from the late 1940s and early 1950s against what he called rationalism in politics, namely, the bureaucratic reformism that underlay the welfare state; and his difficult magnum opus, “On Human Conduct” (1975), which laid out his theory of society as a civil association bound by more than rational self-interest.

Oakeshott is hard to pigeonhole. His style is allusive, he is light on argument and he piled up distinctions with Latin labels in scholastic fashion. In a technical world, he seems distinctly old-fashioned. But that is part of his point. The charge that his approach was aloof, impractical and deaf to realities of wealth and power did not shake him. For Oakeshott, there could be no technical, let alone purely economic, approach to a healthy society. The mainstream left and right, he felt, had got it wrong by concentrating on results, especially material results, while ignoring public virtues such as civility, courage and what Oakeshott called “conversation”—the unending exchange of ideas among people of different beliefs and opinions.

Summarising Oakeshott in this way is bound to make him sound a hothouse English plant. His mannerist, almost dandyish, style has led serious people to make this same misjudgment. Whether or not you end up accepting Oakeshott's vision of a civilised, clubbable society as achievable or even attractive, Mr Franco's fine introduction shows, on the contrary, what a tough and wily thinker he was.

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Oxford University Press; 422 pages; $35 and £25

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Yale University Press; 209 pages; $30 and £27.50

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Sylvia Plath

Original

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IT IS not at all unusual for an editor to tamper with a writer's manuscript. Where would F. Scott Fitzgerald have been without the scrupulous assistance of Maxwell Perkins? In 1921 Ezra Pound's slash-and-burn approach to the editing of a long poem, “The Waste Land”, by a young American poet called T.S. Eliot turned a piece of brilliant but over-extended verbosity into one of the greatest and most enigmatic poems of the 20th century. A more recent case of highly significant editorial intervention happened in 1965.

Sylvia Plath's “Ariel”, first published that year, was a poetic landmark of the decade. It was a coruscating book, painfully self-revelatory, brimming with a fierce, raw energy. Its author had been dead for two years by the time it appeared. The man who edited the book for publication, her estranged husband Ted Hughes, was subject to relentless vilification from feminist critics throughout his life for having in some way precipitated her horrible death (she had gassed herself). Why? Because he had been having an affair during their marriage. According to Hughes's detractors, it was betrayal that drove her to that final despairing act.

Ariel: The Restored Edition
By Sylvia Plath

HarperCollins; 240 pages; $24.95. Faber and Faber; £16.99

Buy it at
Amazon.com
Amazon.co.uk

Hughes was Plath's literary executor, and the “Ariel” which Hughes presented to the world in 1965 was, in his guarded words, “a somewhat different volume” from the manuscript of the same title that Plath had forecast would make her name. The important question, therefore, is this: did Hughes edit the book in ways which would favour his own reputation and manipulate hers? This publication of the facsimile of Plath's own manuscript, which reinstates her original selection and arrangement, allows readers to decide for themselves whether or not Hughes was guilty of self-interested tampering.

Plath left a manuscript of 40 poems in a black folder. Of those 40 poems, Hughes removed 13 and substituted others, many of which were written in an extraordinarily fertile month towards the very end of Plath's life. The poems which Hughes removed from the manuscript are, generally speaking, inferior to the new ones that he chose to include. They are slacker and more anecdotal, and their rhythms drive forward less compulsively. They are no less savage in their subject matter, but they lack the force and concentrated power of the ones that replace them. In these rejected poems, we feel that Plath is writing around a subject rather than emerging from deep inside it.

Does this new evidence of Hughes's seemingly disinterested editorial involvement mean that he was not in some way responsible for her death? Not exactly. It certainly suggests, however, that he was, above all, genuinely concerned to present to the world the best work that he could find by a poet of great and enduring stature. And in somewhat bolstering Hughes's reputation, it also confirms that Plath had been wracked by mental instability long before Hughes started philandering. In the 1950s, for example, she was hospitalised for six months after a suicide attempt. And it was this terrible, lifelong instability that helped to turn Plath, especially in those final months, into the extraordinary poet that she eventually became. Can any poet have asked so many unanswerable questions of God, the self and a chilly, inhospitable world within the space of a single slim volume?

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By Sylvia Plath.
HarperCollins; 240 pages; $24.95. Faber and Faber; £16.99

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About sponsorship

The new García Márquez novel

Love at the age of choler

Dec 2nd 2004
From The Economist print edition

“FOR my 90th birthday,” Gabriel García Márquez's first work of fiction in ten years begins, “I wanted to give myself the gift of a night of mad love with an adolescent virgin.” With such a promising start, and coming two years after the first volume of his memoirs, one might well have expected “A Memoir of My Sad Whores” to be a semi-autobiographical accounting of a life spent in brothels.

Memoria de mis Putas Tristes
By Gabriel García Márquez

Knopf; 109 pages; $17.95. Random House Mondadori; €17

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For the Spanish-speaking world it has been the literary event of the decade. The initial print run was 1m copies, of which 400,000 were sold in the first week. In the author's native Colombia, the slim volume was published under security measures more fitting for a trove of pre-Columbian gold, including 24-hour video surveillance and the constant weighing of the books' storage boxes, to prevent an advance copy from escaping—and pirate prints still appeared on the streets of Bogotá (albeit with four pages missing) a week before the launch.

Even so, the novel is not about whores, although its narrator and protagonist in 1950s Colombia has paid every one of the more than 500 women he has slept with. No, it is about romance. Feeling suddenly mortal, the old curmudgeon decides to accept the depraved offer made many years before by his longtime madam. Unexpectedly, the 14-year-old that she procures becomes the love of his life. Yet he never violates her chastity, nor so much as talks to her. Each night she is so tired from the sweatshop, and so heavily dosed with valerian, that all he can do is watch her slumber while he wrestles with the legacies of nine decades spent in solitude.

Mr García Márquez uses this disarming conceit to explore the idea of old age as a chance for rebirth. The narrator realises that everything he believed about himself was untrue. He determines to challenge the fatalistic dictum—attributed in the book to Julius Caesar—that “it is impossible not to end up the way others think one is”. And through assorted mishaps, he woos his beloved, who continues to sleep soundly through it all.

Absurd? Yes, and so brief that the reader feels short-changed. Even so, the book is beautifully executed, and it has a sort of moral. Great loves often force people to confront unpleasant truths about themselves, but since the great love in this case is not available for comment, the rebirth is entirely the old man's work. A re-examination is always possible, the author seems to say: all one needs is the trigger.

Most telling is the view of women that the book portrays. Aside from the narrator's mother, all the female characters are whores. That mirrors the stereotypical Latin American *machista* division of women into virgins (mothers) and tarts (all the rest). Yet all the women in the book, including the mother, secretly selling off her jewels to keep the family afloat, are also supreme, ever-patient pragmatists. Thus does Mr García Márquez reconcile old-fashioned *machismo* with his belief, noted in his memoirs, that women “are the ones who sustain the world, while we men mess it up with our historical brutality.”

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By Gabriel García Márquez.
Knopf; 109 pages; $17.95. Random House Mondadori; euro17

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About sponsorship

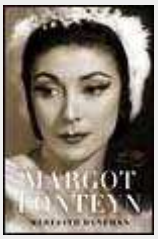
Margot Fonteyn

Untouchable

Dec 2nd 2004
From The Economist print edition

SHE haunts the memories of the Royal Opera House audience, especially in this centenary year of Sir Frederick Ashton's birth, when so many of the ballets that he made for the great ballerina are being revived. Now comes a warmly intelligent biography which traces how the child, born plain Peggy Hookham in 1919, became Margot Fonteyn; how the artist became a national icon and a Dame; and how, with the advent of Rudolf Nureyev, the Dame became a passionate woman.

Margot Fonteyn: A Life
By Meredith Daneman



Viking Books; 654 pages; $32.95.
Penguin Viking; £20

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Fonteyn was pressed into stardom—Odette at 16, Giselle at 17—by two determined women: her formidable mother, and the fearsome Ninette de Valois, founder of the Sadler's Wells Ballet, who wanted a ballerina who could stand for England against all comers. Meredith Daneman conjures up the period, a time of chaperones, rules and obedience. De Valois was “less an artist than a general”, and she transformed the English ballet from something close to a variety act of doubtful respectability to an art form with “royal” written all over it.

Patriotism and hierarchy ruled. In the process, many dancers were cruelly treated, among them, Moira Shearer, Svetlana Beriosova and, later, Lynn Seymour. Ms Daneman has no illusions about the savagery and waste of the whole triumphant enterprise.

Fonteyn was untouchable. One of the pleasures of the book is the way the author has persuaded old friends, lovers and fellow artists to talk, and sweetness and simplicity are what people remember. Fonteyn had an insouciance which allowed her to stray across boundaries and emerge as crisp as royalty itself. She was utterly, even flatly, English, and yet radiantly exotic too; she was virginal, and yet sexually free; bohemian, but also, as Ashton once remarked, “absolutely bourgeois”.

Ms Daneman is not uncritical. Fonteyn's insouciance led her into a friendship with Imelda Marcos, for example, and she toured apartheid South Africa during a cultural ban. At the last minute, she took the lead part in “Romeo and Juliet” from Lynn Seymour, for whom Sir Kenneth Macmillan had specifically choreographed it.

Yet Fonteyn suffered in her way too. Her marriage to a playboy politician, Tito de Arias, Panama's ambassador to London, was wretchedly ill-judged. He cared neither for the ballet nor for fidelity, using his wife to bankroll his revolutionary escapades. Miserable and lonely, Fonteyn was considering divorce when a rival politician's bullet put an end to de Arias's libertinism and restored him, paralysed, to her devotion.

It makes a good story, on and off stage, and Ms Daneman is a writer who cares about words and pace and shape. As an ex-ballerina, she describes dancing with rare authenticity. Fonteyn's New York appearance in “Sleeping Beauty” in 1949 is thrillingly described. The author understands the choreographic process, too, as a two-way traffic between dancer and creator. Above all, she can express that union between dancers whose bodies know each other so very intimately that the normal questions—“did they or didn't they?”—are transcended.

Transcendence is the word from 1961 onwards, when Rudolf Nureyev, the wild Tatar boy 20 years Fonteyn's junior, appeared with the imperious intention of partnering her. The union of great artists, writes Ms Daneman, “is a blessing of almost mystical proportions”—and so it was with Fonteyn and Nureyev. As the biographer says: “Whatever took place behind closed doors...was as nothing compared

to what happened on the stage, in front of our eyes.”

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About sponsorship

Artists and the divine

Sought, not found

Dec 2nd 2004
From The Economist print edition

How to depict God?

WHAT are the greatest paintings in the western tradition? Many would say the Renaissance images of the Christian God—Piero della Francesca's “Nativity”, for example, a crowning glory of London's National Gallery. Church patronage helped to ensure that Jesus, God in human form, was visualised everywhere during the Renaissance: his birth, passion and resurrection.

By the 20th century, religious work lacked the quality and conviction of great art of the past. Good, and sometimes great, religious paintings in the Christian tradition were being made—by Marc Chagall (a Hassidic Jew) and Georges Rouault, for example. But they are the exceptions.

What of the present? After the September 11th terrorist attacks, two American artist-curators, Meg Cranston and John Baldessari, noticed something interesting. Everywhere, God was being invoked again: the God of compassion, the God of vengeance, the God who might perhaps help sufferers make some sense of the incomprehensible or the unbearable. They have curated an exhibition of new art which asks the question: how do you see God now?

In the show, “100 Artists See God”, which is at London's Institute of Contemporary Arts until January 9th (and goes to Virginia Beach, America in June), artists create, at best, images of a kind of vague spirituality. At other times they laugh at the very notion of a transcendent god. The show is divided into three groups: wall-hung pieces, three-dimensional objects and video works. Each group is separated from the onlooker by a kind of knee-high altar rail.

The 82 wall-hung pieces are crowded together on one wall like gods in a Hindu shrine. Centre stage is a colourful acrylic of a urinal by Michael Craig-Martin called “Untitled (God)”, invoking Marcel Duchamp, who submitted a urinal to a show in 1917. Duchamp was making the point that displaying an object in a museum is what elevates and sanctifies it. Next to Mr Craig-Martin's work is a medicine cabinet by a former pupil, Damien Hirst, stocked with all the pills one might need to endure this world of pain.

A pastel by Ed Ruscha of falling shafts of light is the closest the show comes to reverence. Its lack of irony, and the very fact that it seems to relate so directly to the biblical phrase “God is Light”, comes as something of a shock. But the show's overall message is clear: artists seem no longer able to look God in the face.

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About sponsorship

Opera that shocks

Edgy then,edgy now

Dec 2nd 2004 | MOSCOW
From The Economist print edition

A long wait, but worth it

THE Bolshoi theatre is not known for its political radicalism. Yet November marked the return to the theatre of Shostakovich's “Lady Macbeth of Mtsensk”, an opera deemed so edgy that it has not been performed at the Bolshoi since Stalin stormed out in disgust back in 1936.

When the opera was first put on in Leningrad (now St Petersburg) and then in Moscow, it was a phenomenal hit. Yet after Stalin's exit from the Bolshoi, an article in *Pravda* condemned the opera, declaring that the “ability of good music to enthral the masses is sacrificed on the altar of petty-bourgeois formalism”. Shostakovich was chastened, and fearful of being sent to the camps. He never wrote another opera and subtitled his next work, the more traditional Fifth Symphony, “a Soviet artist's response to just criticism”.

What got the Kremlin so riled? Possibly it was the jerky, staccato rhythms of the music. Certainly, it was the opera's subject matter. While the authorities were hoping for socialist realism to uplift the masses, they got instead a grotesque, expressionist opera that dwelt on all that was rotten in Russian society.

The heroine is abused by her authoritarian father-in-law. Her handmaid is more or less gang-raped by serfs. A peasant sings an aria to drunkenness, while in the scene before Stalin walked out the local police sing an ode to corruption. In the final act, a long dismal line of convicts trudges through the snow to exile in Siberia, singing, in the last lines of the opera: “The thoughts we think are so cheerless, and the guards we have so heartless.”

The opera retains its power to shock. It is hard not to think of the state's current attack on one oligarch, Mikhail Khodorkovsky, during the scene in which the corrupt policemen curse the rich heroine for not inviting them to her wedding banquet, and wonder how to get their revenge. “If only we could find a pretext, though a pretext can always be found,” they sing.

When the curtain stayed down for several minutes after the third act, at the point when Stalin had walked out, one began to wonder whether the show had perhaps been banned again. But it eventually carried on, and the audience responded to its bleak finale with silence and then a standing ovation. The masses seem to like this opera still. Though this recent run at the Bolshoi was brief, the production will be revived in January.

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About sponsorship

Agit-porcelain

Tractor art

Dec 2nd 2004
From The Economist print edition

Ceramics in the cause of revolution

THOSE in London have the chance until January to see an extraordinary collection of Soviet porcelain dedicated to the revolutionary cause, not seen before outside Russia. It was all made at what had once been the Imperial Porcelain Factory outside St Petersburg. The exhibition at Somerset House, showing pieces from the State Hermitage Museum in St Petersburg, moves to America next summer.

From 1744 until 1917, the works produced exquisite china for the exclusive pleasure of the Romanov family and the Russian imperial court. Abruptly nationalised after the October Revolution, the factory ended up in the hands of the Department of Fine Arts of the People's Commissariat for Enlightenment. Renamed the State Porcelain Factory, it was instructed to produce works “revolutionary in content, perfect in form and flawless in technical execution”.

Abandoning the neoclassical decoration of the leading European porcelain factories, the painting workshops energetically adopted the new revolutionary aesthetic, led by Sergei Chekhonin, an artist and graphic designer. Chekhonin recruited leading Russian avant-garde artists to create strident propaganda designs, Futurist and Cubist in style, depicting themes such as industrialisation, the Red Army and agrarian reform. Peppered with symbols of the new regime, they were often accompanied by calligraphic slogans.

Perversely, no effort was made to convert the factory to serve the utilitarian needs of the people. Making porcelain is expensive, and production was limited, as before, to serving state purposes: for use at state dinners and as commemorative items and diplomatic gifts. Pieces were sent to exhibitions and auctions abroad to raise foreign currency.

In 1922 Chekhonin was replaced, and two rising painters, Nikolai Suetin and Ilya Chashnik, were invited to execute designs. Both were students of Kazimir Malevich, the influential founder of the Suprematist movement whose abstract theories distilled expression into arrangements of squares, circles and crosses. The pure white of the curving porcelain represented the concept of space; on to this surface these geometric motifs, in blocks of bright colour, were carefully hand-painted.

Before long, new shapes were introduced into the former imperial repertoire. Malevich himself provided designs for a number of iconic—though highly impractical—objects in a Constructivist vein, including a teapot composed of several geometric sections, and semi-circular cups with solid rectangular handles.

Other Russian fine artists, such as Wassily Kandinsky, Vladimir Lebedev, Kuzma Petrov-Vodkin and Ivan Puni, created designs at the factory, while its long-established modellers and painters continued to produce objects with traditionally folkloric themes without apparent state hindrance. Yet by 1924 this feverishly creative period was over. Artistic production fell by more than nine-tenths, as the state made fresh demands. The new focus included technical wares for industrial use.

Applied to the traditional shapes of teapots, cups and saucers, the works of the early 1920s seem today still uncompromisingly modern. But these strictly conceptual designs softened over time into a more decorative style of pattern-making, only to be denounced by the Stalinist government of the mid-1930s as bourgeois—despite imagery that portrayed electricity pylons, cranes, tractors and peasant workers.

These designs by Russia's leading modern artists of the day, working to the utopian imperatives of the factory's political masters, were imposed on objects moulded originally for the most privileged of patrons. It makes this short episode in the history of ceramics both fascinating and unique. Should visitors wish to attempt to drink from it, they can buy a replica of Malevich's white Constructivist teaset, for £225

($430). Meanwhile, the influence of the Russian avant-garde can be seen in a small display of paintings by Zaha Hadid, a contemporary architect, staged to coincide with the exhibition at the adjacent Gilbert Collection: on until January 16th.

“Circling the Square: Avant-garde Porcelain from Revolutionary Russia”, is at the Hermitage Rooms, Somerset House, London, until July 31st 2005.

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About sponsorship

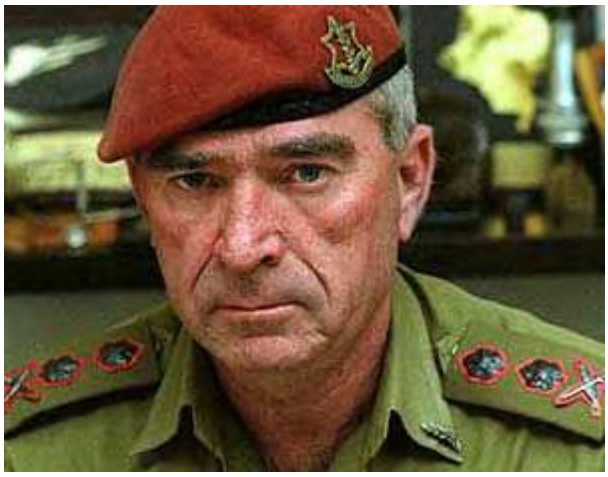
Obituary

Rafael Eitan

Dec 2nd 2004
From The Economist print edition

Rafael Eitan, born Rafael Kaminsky, Israeli general, died on November 23rd, aged 75

AP



THE land of Israel Rafael Eitan knew best was the scrubby semi-desert of the north-west, in the valley of Jezreel, over from Armageddon. His home for most of his life was the *moshav*, or communal farm, of Tel Adashim, a place of thick summer dust and deep winter mud, where he grew up in poverty at a time when the British ruled in Palestine. The only vestiges of a Jewish homeland were pockets like Tel Adashim where, in the dark cow-barn, Rafael and his father would sit on milking stools and swap dream-talk about Israel.

General Eitan, an instinctive soldier, was also a farmer to his bones. To his mind, the two trades went together; if a man worked and loved the land, he would fight all the more fervently to defend it. At 16 he joined the Palmach, a youth wing of the then-illegal Haganah, or Jewish self-defence force, and went off to a kibbutz where he learned both to fight and farm. Arthur Koestler wrote about boys of his kind, the "tough and tasteless" sons of nervous, cosmopolitan immigrant parents:

> they know all about fertilisers and irrigation and rotation of crops; they know the names of birds and plants and flowers; they know how to shoot, and fear neither Arab nor devil.

Certainly young Rafael did not fear Arabs. He hated them. At seven, he saw the *moshav*'s fields set ablaze by Arabs and the village mules driven away. Visiting relatives in the nearest town, he would ride on a bus with thick netting on the windows to keep out Arab stones. An early memory was himself on Geulah, his favourite horse, scaring off Arabs who had let their flocks stray into the village corn. They had no business on Jewish land.

General Eitan fought in every one of Israel's wars, from 1948 to the 1982 war on Lebanon, keeping the Arabs out. All Arab leaders, he wrote, were the same. They had no desire for peace with Israel, and differed only in the tactics they were prepared to use to see the nation destroyed. For Bedouin Arabs he had some liking; they, after all, made no settled land claims. The rest were a sort of vermin.

After the six-day war in 1967, when new work-and-entry rules were imposed on Palestinians in Israel, General Eitan famously said he would make them "run around like drugged cockroaches in a bottle". His autobiography, "A Soldier's Story", began with an incident in which, matter-of-factly, he drowned an Arab in a stream. Once, on the eve of another Arab war, he had to fight an enormous viper, eventually beating

its head to pulp on the sand; it was, for him, a metaphor of the job to be done. His father had taught him, when a child, to track animals in the desert. He was grateful, since it enabled him in later years, on patrol in the Jordan Valley, to track the movements of terrorist gangs from the butts of their cigarettes.

“The Phalangists are overdoing it”

Fighting took him deep into hostile territory. In the 1956 Sinai campaign he parachuted with his company into the Mitla Pass, 120 miles behind Egyptian lines. During the Yom Kippur war of 1973 he fought the Syrians on the Golan Heights, often in thick snow. When land was captured, he saw no reason why Israel should ever give it back. He did his best to persuade Ariel Sharon—a contemporary, friend and intermittent rival who was then defence minister—not to evacuate the Sinai settlements under the Camp David agreement. In 1984 he went into politics as the head of Tzomet, a short-lived hardline party that was opposed to any peace deals with the Palestinians. His creed was what he had learned back in the Palmach: “Jews do not have the luxury of making errors.”

He made none himself, or did not consider he had. He was a fine, brave soldier and, as chief of staff of the Israeli Defence Force, from 1978-83, he ran a tight ship. His men were made to shave, shine their boots and wear their berets. To set an example of frugality, General Eitan would collect spent cartridges after firing practice; he also ate with his men, and slept on a camp bed. But he had his pride. He resisted all attempts by defence ministers to set up “national security councils” over his head, and ran Jonathan Pollard, who spied for Israel in Washington in the mid-1980s, without letting anyone in the cabinet know.

Most of all, he claimed, he cared about the concept of *tohar haneshek*, “purity of arms”: the question of when it was legitimate to kill, and when it was not. Here the world took issue with him. In June 1982, General Eitan at last persuaded Mr Sharon to invade southern Lebanon to clean out the Palestine Liberation Organisation from its bases there. Some of those bases were in the refugee camps of Sabra and Shatila. General Eitan allowed Israel's Christian Phalangist allies to enter the camps; some 800-2,000 refugees were slaughtered. In the middle of the massacre, General Eitan was told by telephone that the Phalangists were “overdoing it”. He did not stir.

A commission later reprimanded him—outrageously and unnecessarily, he thought. It was the end of his military career. His subsequent foray into politics led to cabinet posts in agriculture and environment, with a sideline in intelligence; he resigned from government over Israel's concessions at Madrid in 1991. He seemed to be happiest back in Tel Adashim, carving rocking horses. He also grew olives there, but not as plants of peace.

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Overview

Dec 2nd 2004
From The Economist print edition

The **dollar** continued to fall against most currencies as investors worried about America's large current-account deficit and the Bush administration displayed an indifference to the greenback's decline. The **euro** rose above $1.33, another all-time high. **Sterling** rose to a 12-year high against the dollar of over $1.92.

Although it did not stop the dollar's slide, **America's** economic news was generally cheerful. Manufacturing activity rose by more than expected in November, according to the Institute for Supply Management's index. Monthly consumer spending grew by 0.7% in October, a faster-than-expected pace. Personal incomes increased by 0.6% in the same period, the biggest rise since May. Third-quarter GDP growth was revised up to 3.9%.

But there are clouds on the horizon. America's **consumer confidence**, as measured by the Conference Board, dropped to its lowest level since March. Early indicators from retailers suggest that the holiday shopping season got off to a sluggish start.

The evidence of an economic slowdown in the **euro area** continues to mount. Euro-area GDP rose by a revised 1.8% in the year to the third quarter, down from 1.9% in the previous estimate. Unemployment held steady at 8.9% in October, according to Eurostat.

Consumer confidence in **France** fell in November for the third month in a row according to INSEE, the national statistics office. Business confidence also fell in November. France's jobless rate stayed unchanged at 9.9% in October. Adjusted for inflation, retail sales in **Germany** fell by 0.4% in October compared with September, and fell by 2.6% from a year earlier.

It was a bad week for **Japan's** economy. October's industrial production was surprisingly weak. It fell by 1.6% compared with September and was 1.1% lower than a year ago. The unemployment rate rose to 4.7% in October from 4.6% in September. The Nikkei average fell to a one-month low.

Canada's GDP rose by an annualised 3.2% between July and September and by 3.3% in the year to the third quarter. Although domestic demand remained strong, exports fell.

In the year to the third quarter, **Australia's** GDP grew by 3.0% and its current-account deficit widened to 6.0% of GDP.

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Output, demand and jobs

Dec 2nd 2004
From The Economist print edition

% change on year ago

	GDP latest		GDP qtr*	The Economist poll GDP forecasts 2004	2005	Industrial production latest		Retail sales (volume) latest		Unemployment % rate latest		year ago
Australia	+ 3.0	Q3	+ 1.2	+ 3.6	+ 3.2	+ 4.6	Q2	+ 5.7	Q3	5.3	Oct	5.9
Austria	+ 1.8	Q2	+ 3.5	+ 1.6	+ 2.1	+ 6.5	Sep	+ 3.2	Aug	4.5	Oct	4.6
Belgium	+ 3.0	Q3	+ 3.2	+ 2.4	+ 2.1	+ 0.9	Sep	+ 0.9	Aug	13.2	Oct†	12.9
Britain	+ 3.0	Q3	+ 1.5	+ 3.2	+ 2.5	– 0.9	Sep	+ 6.0	Oct	4.6	Sep††	5.0
Canada	+ 3.3	Q3	+ 3.2	+ 3.0	+ 3.3	+ 3.8	Sep	+ 3.6	Aug	7.1	Oct	7.6
Denmark	+ 1.9	Q3	+ 0.2	+ 2.3	+ 2.3	– 2.6	Sep	+ 6.5	Oct	6.3	Sep	6.3
France	+ 2.0	Q3	+ 0.3	+ 2.4	+ 2.2	+ 2.9	Sep	+ 1.0	Aug	9.9	Oct	9.9
Germany	+ 1.3	Q3	+ 0.4	+ 1.5	+ 1.6	+ 2.5	Sep	– 2.6	Oct	10.8	Nov§	10.5
Italy	+ 1.3	Q3	+ 1.7	+ 1.1	+ 1.6	+ 0.8	Sep	– 4.0	Aug	8.1	Apr	8.7
Japan	+ 3.9	Q3	+ 0.3	+ 4.3	+ 2.1	– 1.1	Oct	– 0.4	Sep	4.7	Oct	5.2
Netherlands	+ 1.4	Q3	+ 0.8	+ 1.2	+ 1.6	– 0.6	Sep	– 0.1	Aug‡	6.3	Oct**	5.4
Spain	+ 2.6	Q3	+ 2.4	+ 2.6	+ 2.5	+ 3.9	Sep	+ 0.2	Sep	10.5	Oct	11.2
Sweden	+ 3.6	Q2	+ 4.0	+ 3.4	+ 2.9	+ 5.3	Sep	+ 3.5	Oct	4.9	Oct†	5.1
Switzerland	+ 2.0	Q2	+ 1.6	+ 1.8	+ 2.0	+ 4.3	Q2	– 0.3	Sep	3.7	Oct†	3.8
United States	+ 4.0	Q3	+ 3.9	+ 4.4	+ 3.4	+ 5.2	Oct	+ 6.3	Sep	5.5	Oct	6.0
Euro area	+ 1.8	Q3	+ 1.2	+ 1.8	+ 1.9	+ 2.9	Sep	nil	Sep	8.9	Oct	8.9
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*											
Finland	+ 2.7	Q2	+ 2.9	na	na	+ 7.0	Oct	+ 4.9	Sep	8.0	Oct†	8.3
Greece	+ 3.9	Q2	– 0.6	na	na	+ 0.8	Sep	+ 6.6	Jul	na		na
Iceland	+ 6.2	Q2	na	na	na	na		na		2.6	Sep†	2.7
Ireland	+ 4.1	Q2	na	na	na	+ 5.2	Sep	+ 3.2	Sep	4.4	Oct	4.6
Luxembourg	+ 2.1	2003	na	na	na	– 1.2	Dec	– 8.2	Sep	4.2	Sep	3.8
New Zealand	+ 6.0	Q2	+ 4.6	na	na	+ 5.5	Q2	+ 7.4	Q3	3.8	Q3	4.4
Norway	+ 4.1	Q2	+ 5.0	na	na	– 3.3	Sep	+ 2.0	Sep	3.5	Oct‡	3.7
Portugal	+ 1.5	Q2	+ 4.7	na	na	– 3.6	Sep	+ 3.6	Sep	6.8	Q3†	6.1

*% change on previous quarter at an annual rate. †Not seasonally adjusted. ‡New series. ††Jul-Sep; claimant count rate 2.7% in Oct. §EU harmonised rate 9.9% in Oct. **Aug-Oct.

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Prices and wages

Dec 2nd 2004
From The Economist print edition

% change on year ago

	Consumer prices latest		Consumer prices year ago	The Economist poll consumer prices forecast 2004	The Economist poll consumer prices forecast 2005	Producer prices latest		Producer prices year ago	Wages/earnings latest		Wages/earnings year ago
Australia	+ 2.3	Q3	+ 2.6	+ 2.5	+ 2.7	+ 6.1	Q3	– 0.1	+ 3.7	Q3	+ 5.1
Austria	+ 2.6	Oct	+ 1.0	+ 1.7	+ 1.6	+ 6.0	Oct	+ 2.0	+ 2.0	Sep	+ 2.3
Belgium	+ 2.5	Nov	+ 1.9	+ 2.0	+ 1.8	+ 6.0	Oct	– 1.0	+ 2.2	Jul	+ 1.9
Britain	+ 1.2	Oct*	+ 1.4	+ 1.4	+ 1.7	+ 3.5	Oct	+ 1.5	+ 3.7	Sep†	+ 3.6
Canada	+ 2.3	Oct	+ 1.6	+ 2.0	+ 2.2	+ 4.6	Sep	– 2.7	+ 2.2	Aug	+ 3.5
Denmark	+ 1.7	Oct	+ 1.4	+ 1.2	+ 1.8	+ 3.6	Oct	nil	+ 2.9	Q3	+ 3.7
France	+ 2.1	Oct	+ 2.2	+ 2.3	+ 1.7	+ 3.5	Oct	+ 0.3	+ 2.7	Q3	+ 2.9
Germany	+ 1.8	Nov	+ 1.3	+ 1.8	+ 1.4	+ 4.2	Oct	+ 0.6	+ 0.9	Sep	+ 2.6
Italy	+ 2.0	Nov	+ 2.5	+ 2.3	+ 2.1	+ 4.4	Oct	+ 0.7	+ 2.7	Oct	+ 2.6
Japan	+ 0.5	Oct	nil	– 0.1	+ 0.1	+ 1.9	Oct	– 0.5	– 0.2	Oct	+ 2.1
Netherlands	+ 1.4	Oct	+ 2.0	+ 1.4	+ 1.3	+ 6.0	Sep	– 0.3	+ 1.1	Oct	+ 2.3
Spain	+ 3.6	Oct	+ 2.7	+ 2.9	+ 2.8	+ 5.4	Oct	+ 0.6	+ 3.1	Q2	+ 4.2
Sweden	+ 0.8	Oct	+ 1.4	+ 0.7	+ 1.6	+ 3.0	Oct	– 1.9	+ 2.2	Aug	+ 3.3
Switzerland	+ 1.5	Nov	+ 0.5	+ 0.7	+ 1.1	+ 2.0	Oct	– 0.3	+ 1.4	2003	+ 1.8
United States	+ 3.2	Oct	+ 2.0	+ 2.6	+ 2.3	+ 4.4	Oct	+ 3.9	+ 2.6	Oct	+ 2.2
Euro area	+ 2.2	Nov	+ 2.2	+ 2.1	+ 1.8	+ 3.4	Sep	+ 1.1	+ 2.1	Q2	+ 3.3
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*										
Finland	+ 0.9	Oct	+ 0.3	na	na	+ 3.0	Oct	– 0.9	+ 3.5	Q2	+ 4.4
Greece	+ 3.2	Oct	+ 3.2	na	na	+ 2.7	Sep	+ 1.5	na		na
Iceland	+ 3.8	Nov	+ 2.5	na	na	+ 6.1	Nov	+ 3.3	+ 5.3	Oct	+ 5.5
Ireland	+ 2.7	Oct	+ 2.3	na	na	– 0.4	Oct	– 8.4	+ 3.8	Q2	+ 8.0
Luxembourg	+ 2.5	Oct	+ 1.7	na	na	+15.0	Sep	+ 0.5	– 0.4	Dec	+ 0.7
New Zealand	+ 2.5	Q3	+ 1.5	na	na	+ 2.5	Q3	+ 0.1	+ 2.2	Q3	+ 2.3
Norway	+ 1.4	Oct	+ 1.6	na	na	+24.1	Oct	+ 2.1	+ 4.6	Q3	+ 4.2
Portugal	+ 2.1	Oct	+ 3.0	na	na	+ 5.2	Oct	– 0.8	+ 1.4	Sep	– 1.8

*New series. RPI inflation rate 3.3% in Oct. †Jul-Sep.

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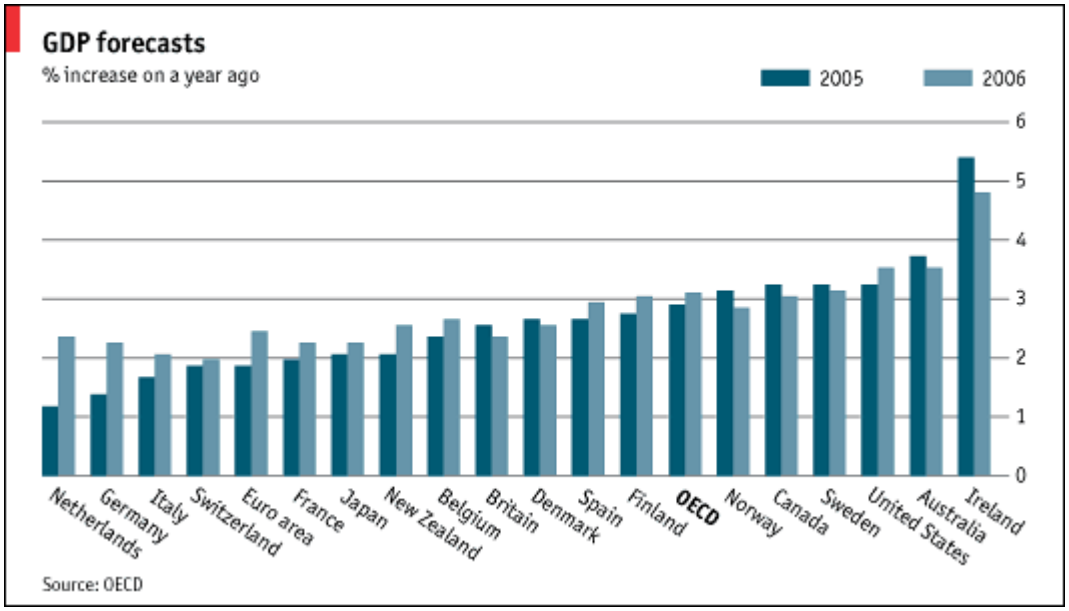
GDP forecasts

Dec 2nd 2004
From The Economist print edition



The OECD is forecasting a slowdown next year followed by a mild upturn in 2006. GDP growth across the OECD will slacken from 3.6% in 2004 to 2.9% in 2005, picking up to 3.1% in 2006. American growth will slow from 4.4% in 2004 to 3.3% in 2005, rising to 3.6% in 2006. Growth in the euro area will be a modest 1.9% in 2005, only a bit faster than in 2004, rising to 2.5% in 2006, predicts the OECD.

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Money and interest rates

Dec 2nd 2004
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	Money supply* % change on year ago			Interest rates % a year (Dec 1st 2004)					
				3-mth money market		2-year	10-year gov't bonds		corporate
	narrow	broad		latest	year ago	gov't bonds	latest	year ago	bonds
Australia	+ 5.0	+ 9.5	Oct	5.39	5.37	4.85	5.22	5.94	6.10
Britain	+ 5.8	+ 9.8	Oct	4.81	3.97	4.47	4.62	5.02	5.26
Canada	+15.6	+10.7	Oct	2.54	2.68	3.01	4.49	4.88	5.88
Denmark	+10.2	+ 9.5	Oct	2.25	2.18	2.44	3.96	4.57	5.22
Japan	+ 4.3	+ 2.1	Oct	0.02	0.02	0.11	1.46	1.44	1.54
Sweden	+ 1.4	+ 3.1	Oct	2.02	2.71	2.39	4.00	4.93	2.46
Switzerland	– 4.7	+ 0.4	Oct	0.73	0.28	1.07	2.31	2.79	2.30
United States	+ 4.6	+ 4.8	Oct	2.38	1.10	3.01	4.37	4.41	5.75
Euro area†	+ 9.0	+ 5.8	Oct	2.17	2.16	2.32	3.75	4.38	3.54

*Narrow: M1 except Britain and Sweden M0, broad: M2 or M3 except Britain M4. †Germany for bonds. Benchmarks: US 30-year 5.01%, Japan No. 264 1.44%. Central bank rates: US fed funds 1.75%, ECB refinancing 2.00%, BOJ overnight call 0.001%, BOE repo 4.75%. Sources: Commerzbank, Danske Bank, J.P. Morgan Chase, Royal Bank of Canada, Stockholmsbörsen, UBS, Global Insight, Westpac, Thomson Datastream. Rates cannot be construed as banks' offers.

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The Economist commodity price index

Dec 2nd 2004
From The Economist print edition

1995=100

	Nov 16th*	Nov 23rd	Dec 30th†	% change on one month	% change on one year
Dollar index					
All items	88.4	88.6	89.2	+ 3.7	+ 0.9
Food	81.3	81.4	81.3	+ 3.6	– 7.9
Industrials					
All	98.2	98.3	99.9	+ 3.9	+12.8
Nfa‡	82.4	82.0	82.5	+ 1.6	– 7.8
Metals	111.5	112.2	114.6	+ 5.3	+30.5
Sterling index					
All items	75.3	74.7	73.6	– 0.3	– 8.7
Euro index					
All items	89.6	89.0	88.3	– 0.9	– 8.2
Yen index					
All items	99.2	97.4	97.6	+ 0.4	– 4.8
Gold					
$ per oz	439.83	448.43	448.98	+ 6.5	+11.3
West Texas Intermediate					
$ per barrel	46.06	48.79	49.06	– 1.1	+59.6

* Revised. † Provisional. ‡ Non-food agriculturals.

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Stockmarkets

Dec 2nd 2004
From The Economist print edition

Market indices

	Dec 1st	2004 high	2004 low	% change on one week	% change on record high	% change on Dec 31st 2003 in local currency	% change on Dec 31st 2003 in $ terms
Australia (All Ordinaries)	3,914.3	3,914.3	3,274.9	+ 0.5	– 0.7	+18.4	+22.0
Austria (ATX)	2,325.1	2,325.1	1,568.9	+ 2.6	nil	+50.5	+58.8
Belgium (Bel 20)	2,886.0	2,886.0	2,244.2	+ 0.5	–21.6	+28.6	+35.7
Britain (FTSE 100)	4,735.7	4,805.3	4,287.0	+ 0.3	–31.7	+ 5.8	+13.9
Canada (Toronto Composite)	9,064.5	9,064.5	8,123.5	+ 1.0	–20.4	+10.3	+20.3
Denmark (KBX)	255.4	255.9	219.0	– 0.2	–15.4	+19.6	+26.5
France (SBF 250)	2,600.8	2,623.3	2,386.1	+ 0.9	–40.8	+ 7.8	+13.8
(CAC 40)	3,796.7	3,844.1	3,465.3	+ 1.0	–45.2	+ 6.7	+12.6
Germany (DAX)	4,186.0	4,186.0	3,647.0	+ 1.5	–48.1	+ 5.6	+11.4
Italy (BCI)	1,411.5	1,415.8	1,239.5	+ 0.5	–35.3	+12.3	+18.5
Japan (Nikkei 225)	10,784.3	12,163.9	10,365.4	– 0.8	–72.3	+ 1.0	+ 5.2
(Topix)	1,087.4	1,217.9	1,022.6	– 0.3	–62.3	+ 4.2	+ 8.5
Netherlands (AEX)	342.8	364.8	310.7	+ 1.6	–51.1	+ 1.5	+ 7.1
Spain (Madrid SE)	925.6	925.6	804.4	+ 1.0	–19.3	+14.6	+20.9
Sweden (Affarsvarlden Gen)	221.5	221.5	188.5	+ 1.5	–44.7	+17.6	+26.0
Switzerland (Swiss Market)	5,509.3	5,934.4	5,309.7	+ 0.1	–34.5	+ 0.4	+ 8.6
United States (DJIA)	10,590.2	10,737.7	9,750.0	+ 0.7	– 9.7	+ 1.3	+ 1.3
(S&P 500)	1,191.4	1,191.4	1,063.2	+ 0.8	–22.0	+ 7.1	+ 7.1
(NASDAQ Comp)	2,138.2	2,153.8	1,752.5	+ 1.7	–57.6	+ 6.7	+ 6.7
Europe (FTSE Eurotop 300)*	1,034.8	1,037.4	940.9	+ 1.2	–39.3	+ 8.0	+14.0
Euro area (FTSE Ebloc 100)*	887.1	888.3	787.2	+ 1.2	–42.8	+ 6.7	+12.5
World (MSCI)†	1,139.5	1,139.5	997.0	+ 1.1	–21.4	+10.0	+10.0
World bond market (Citigroup)‡	655.4	655.4	575.1	+ 0.5	nil	+ 8.6	+ 8.6

*In euro terms. †Morgan Stanley Capital International index includes individual markets listed above plus eight others, in $ terms.
‡Citigroup World Government Bond Index, total return, in $ terms.

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Trade, exchange rates and budgets

Dec 2nd 2004
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	Trade balance*, $bn latest 12 months		Current-account balance $bn latest 12 mths		The Economist poll % of GDP, forecast 2004	2005	Exchange rate trade-weighted† 1990=100 Dec 1st	year ago	Currency units per $ Dec 1st	year ago	per £	per euro	per ¥100	Budget balance % of GDP 2004‡
Australia	− 17.0	Sep	− 36.2	Q3	− 5.8	− 5.3	86.8	87.2	1.29	1.36	2.48	1.71	1.25	+ 0.7
Austria	− 0.1	Sep	− 1.1	Sep	− 0.3	− 0.4	103.1§	102.6	0.75	0.83	1.45	–	0.73	− 1.5
Belgium	+ 20.5	Sep	+ 13.0	Jun	+ 3.3	+ 3.2	103.3§	102.7	0.75	0.83	1.45	–	0.73	− 0.1
Britain	−101.1	Sep	− 41.7	Q2	− 2.5	− 2.7	103.4	100.1	0.52	0.58	–	0.69	0.50	− 3.2
Canada	+ 50.2	Sep	+ 26.7	Q3	+ 2.8	+ 2.5	96.1	88.8	1.18	1.30	2.28	1.58	1.15	+ 1.1
Denmark	+ 9.8	Sep	+ 6.5	Sep	+ 2.9	+ 2.6	107.1	106.3	5.58	6.15	10.8	7.43	5.42	+ 0.9
France	− 2.8	Sep	− 2.3	Sep	+ 0.3	+ 0.3	106.8§	106.0	0.75	0.83	1.45	–	0.73	− 3.7
Germany	+186.4	Sep	+ 90.2	Sep	+ 3.2	+ 2.9	104.5§	103.5	0.75	0.83	1.45	–	0.73	− 3.9
Italy	+ 2.4	Sep	− 12.6	Sep	− 0.9	− 1.1	76.2§	75.5	0.75	0.83	1.45	–	0.73	− 2.9
Japan	+130.9	Oct	+169.0	Sep	+ 3.5	+ 3.5	137.4	136.8	103	108	198	137	–	− 6.5
Netherlands	+ 35.0	Sep	+ 21.0	Q3	+ 2.9	+ 3.0	102.8§	102.1	0.75	0.83	1.45	–	0.73	− 2.9
Spain	− 66.3	Aug	− 38.5	Aug	− 3.4	− 3.6	77.3§	76.9	0.75	0.83	1.45	–	0.73	− 1.1
Sweden	+ 22.9	Oct	+ 26.2	Q3	+ 7.0	+ 6.4	84.0	82.8	6.72	7.41	13.0	8.94	6.53	+ 0.5
Switzerland	+ 7.9	Oct	+ 45.0	Q2	+11.3	+10.8	115.2	111.3	1.14	1.29	2.21	1.52	1.11	− 1.6
United States	−621.1	Sep	−571.9	Q2	− 5.5	− 5.4	89.0	96.6	–	–	1.93	1.33	0.97	− 4.4
Euro area	+100.1	Sep	+ 55.1	Sep	+ 0.6	+ 0.6	93.2	91.1	0.75	0.83	1.45	–	0.73	− 2.9
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*													
Finland	+ 14.6	Sep	+ 8.6	Sep	na	na	82.2§	81.5	0.75	0.83	1.45	–	0.73	+ 2.3
Greece	− 30.1	Sep	− 10.3	Sep	na	na	59.7§	59.3	0.75	0.83	1.45	–	0.73	− 5.3
Iceland	− 0.4	Sep	− 0.6	Q2	na	na	96.1**	95.0	64.4	73.7	124	85.7	62.5	+ 0.1
Ireland	+ 42.2	Sep	− 1.7	Q2	na	na	94.8§	94.2	0.75	0.83	1.45	–	0.73	+ 0.2
Luxembourg	− 4.3	Aug	+ 2.1	Q2	na	na	103.3§	102.7	0.75	0.83	1.45	–	0.73	− 0.4
New Zealand	− 2.6	Sep	− 3.9	Q2	na	na	107.9	103.1	1.39	1.54	2.69	1.86	1.35	+ 2.9
Norway	+ 32.5	Oct	+ 31.7	Aug	na	na	99.5	98.9	6.12	6.71	11.8	8.15	5.95	+ 8.2
Portugal	− 16.9	Aug	− 11.6	Sep	na	na	93.6**	93.6	0.75	0.83	1.45	–	0.73	− 2.9

*Merchandise. Australia, Britain, France, Canada, Japan and United States imports fob, exports fob. All others cif/fob. †Bank of England except §IMF, September average. ‡OECD forecast. **IMF, July average.

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Exchange rates against the dollar

Dec 2nd 2004
From The Economist print edition

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Overview

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From The Economist print edition

Several **Asian economies** reported healthy growth. In the year to the third quarter, GDP grew by 7.2% in **Hong Kong**, by 6.8% in **Malaysia** and by 6.3% in the **Philippines**. **Indonesia's** economy was the laggard by comparison. Growth was 5.0% in the year to the third quarter, and consumer-price inflation ran at 6.2% in the year to November.

Brazil's economy grew in the year to the third quarter by 6.1%, its fastest pace in eight years. **Colombia's** economy grew by 2.4% during the same period.

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AIDS

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From The Economist print edition

December 1st marked World AIDS Day, but there was mostly bad news to consider. An estimated 39.4m people, a record number, are infected with HIV, according to UNAIDS. In the past year, 3.1m people have died of AIDS. While sub-Saharan Africa is still hardest hit by the epidemic, the number of HIV infections is growing most rapidly in parts of Asia and Eastern Europe. Women increasingly bear the brunt of the disease, especially in sub-Saharan Africa where they account for 57% of adult infections. Women need more education, better economic opportunities and more effective ways to tackle the violence and discrimination that often leave them vulnerable to HIV infection.

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Economy

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From The Economist print edition

	% change on year ago						Latest 12 months, $bn				Foreign reserves* $bn, latest	
	GDP		Industrial production		Consumer prices		Trade balance		Current account			
China	+ 9.1	Q3	+15.7	Oct	+ 4.3	Oct	+21.6	Oct	+45.9	2003	514.5	Sep
Hong Kong	+ 7.2	Q3	+ 1.1	Q2	+ 0.2	Oct	−13.4	Oct	+13.6	Q2	119.5	Oct
India	+ 7.4	Q2	+ 7.7	Sep	+ 4.8	Sep	−20.3	Oct	+11.0	Q2	115.7	Oct
Indonesia	+ 5.0	Q3	− 2.3	Aug	+ 6.2	Nov	+25.6	Oct	+ 3.9	Q2	34.1	Oct
Malaysia	+ 6.8	Q3	+ 9.8	Sep	+ 2.1	Oct	+21.1	Sep	+13.6	Q2	58.6	Oct
Philippines	+ 6.3	Q3	+ 7.2	Sep	+ 7.1	Oct	− 1.2	Sep	+ 4.5	Jun	12.6	Oct
Singapore	+ 7.5	Q3	+11.8	Sep	+ 1.9	Oct	+15.6	Oct	+29.0	Q3	105.8	Oct
South Korea	+ 4.6	Q3	+ 9.3	Sep	+ 3.3	Nov	+29.4	Nov	+27.5	Oct	178.3	Oct
Taiwan	+ 5.3	Q3	+ 2.9	Oct	+ 2.4	Oct	+ 9.0	Oct	+24.8	Q3	235.0	Oct
Thailand	+ 6.3	Q2	+ 7.7	Sep	+ 3.0	Nov	+ 1.1	Sep	+ 6.7	Sep	45.1	Oct
Argentina	+ 7.0	Q2	+ 5.2	Oct	+ 5.6	Oct	+12.5	Oct	+ 4.6	Q2	18.6	Oct
Brazil	+ 6.1	Q3	+ 7.6	Sep	+ 6.9	Oct	+33.0	Nov	+10.8	Oct	49.4	Oct
Chile	+ 6.8	Q3	+ 5.2	Oct	+ 1.9	Oct	+ 7.9	Oct	+ 2.0	Q3	15.7	Oct
Colombia	+ 2.4	Q3	+ 2.4	Sep	+ 5.8	Nov	+ 0.4	Aug	− 1.6	Q2	12.1	Oct
Mexico	+ 4.4	Q3	+ 5.5	Sep	+ 5.4	Oct	− 5.9	Oct	− 5.5	Q3	62.2	Sep
Peru	+ 4.5	Sep	+ 4.0	Sep	+ 4.0	Oct	+ 2.2	Sep	− 0.3	Q3	11.4	Oct
Venezuela	+15.8	Q3	+19.7	Aug	+19.7	Oct	+21.5	Q3	+14.4	Q3	16.1	Aug
Egypt	+ 4.3	2004†	+ 2.3	2003†	+11.9	Sep	− 7.5	Q2	+ 3.7	Q2	13.2	Jul
Israel	+ 3.4	Q3	+ 2.5	Sep	+ 0.8	Oct	− 6.5	Oct	+ 0.1	Q2	26.1	Oct
South Africa	+ 3.8	Q3	+ 6.1	Sep	+ 2.4	Oct	− 2.1	Oct	− 3.5	Q2	11.3	Oct
Turkey	+13.4	Q2	+ 5.4	Sep	+ 9.9	Oct	−32.5	Oct	−14.0	Sep	35.9	Oct
Czech Republic	+ 4.1	Q2	+ 6.6	Sep	+ 3.5	Oct	− 1.8	Sep	− 6.2	Q2	27.1	Oct
Hungary	+ 3.7	Q3	+ 6.7	Sep	+ 6.3	Oct	− 3.0	Q2	− 8.4	Q2	14.5	Oct
Poland	+ 6.1	Q2	+ 3.3	Oct	+ 4.5	Oct	− 5.1	Sep	− 3.4	Sep	34.1	Oct
Russia	+ 7.4	Q2	+ 3.5	Oct	+11.5	Oct	+78.6	Sep	+44.6	Q3	103.6	Oct
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*											
Estonia	+ 5.9	Q2	+ 6.3	Oct	+ 4.5	Oct	− 2.5	Sep	− 1.5	Q2	1.5	Sep
Latvia	+ 7.7	Q2	+ 3.3	Sep	+ 7.2	Oct	− 1.5	Sep	− 1.5	Sep	1.7	Sep
Lithuania	+ 6.0	Q3	na		+ 3.3	Oct	− 3.1	Sep	− 1.8	Q2	3.3	Sep
Slovakia	+ 5.4	Q2	+ 5.0	Sep	+ 6.6	Oct	− 1.1	Sep	− 1.0	Aug	12.8	Sep
Slovenia	+ 4.6	Q2	+ 3.9	Sep	+ 3.6	Nov	− 1.0	Sep	− 0.8	Sep	7.8	Aug
Pakistan	+ 6.4	2004†	+27.0	Jun	+ 8.7	Oct	− 4.3	Oct	+ 0.8	Q3	10.8	Sep
Saudi Arabia	+ 7.2	2003	na		nil	Sep	+59.1	2003	+28.0	2003	22.3	Sep

*Excluding gold, except Singapore; IMF definition. †Year ending June.

Sources: National statistics offices, central banks and stock exchanges; Thomson Datastream; Economist Intelligence Unit; Reuters; J.P. Morgan Chase; Hong Kong Monetary Authority; Centre for Monitoring Indian Economy; FIEL; EFG-Hermes; Bank Leumi Le-Israel; Standard Bank Group; Akbank; Deutsche Bank

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Financial markets

Dec 2nd 2004
From The Economist print edition

	Currency units			Interest rates	Stockmarkets	% change on		
	per $		per £	short-term	Dec 1st		Dec 31st 2003	
	Dec 1st	year ago	Dec 1st	% a year		one week	in local currency	in $ terms
China	8.28	8.28	16.0	3.00	1,401.5	– 1.8	– 10.7	– 10.7
Hong Kong	7.77	7.76	15.0	0.58	14,162.8	+ 1.2	+ 12.6	+ 12.5
India	44.3	45.6	85.4	5.35	6,227.8	+ 3.2	+ 6.7	+ 9.9
Indonesia	9,010	8,488	17,374	7.49	986.2	+ 2.6	+ 42.5	+ 33.2
Malaysia	3.80	3.80	7.33	2.83	914.6	+ 0.4	+ 15.2	+ 15.2
Philippines	56.1	55.4	108.2	6.69	1,816.5	– 0.5	+ 25.9	+ 24.6
Singapore	1.63	1.72	3.15	1.38	2,038.8	– 0.1	+ 15.5	+ 20.2
South Korea	1,046	1,196	2,017	3.36	876.8	+ 0.5	+ 8.2	+ 23.2
Taiwan	32.2	34.1	62.1	1.25	5,798.6	– 1.9	– 1.6	+ 3.8
Thailand	39.3	39.9	75.8	2.15	655.4	+ 1.9	– 15.1	– 14.4
Argentina	2.94	2.98	5.68	5.31	1,221.0	+ 3.3	+ 13.9	+ 13.5
Brazil	2.71	2.93	5.23	17.21	25,234.0	+ 3.6	+ 13.5	+ 20.7
Chile	584	605	1,127	2.28	9,054.3	+ 1.6	+ 23.4	+ 25.2
Colombia	2,475	2,812	4,772	7.68	4,300.5	+ 2.4	+ 84.3	+107.0
Mexico	11.2	11.3	21.6	8.37	12,233.9	+ 2.7	+ 39.1	+ 39.8
Peru	3.30	3.48	6.37	3.02	3,610.5	+ 0.3	+ 48.3	+ 55.6
Venezuela	2,411§	1,598	4,650	12.80	29,613.4	– 0.7	+ 33.4	+ 57.7
Egypt	6.24	6.16	12.04	10.24	22,813.9	– 0.8	+ 96.0	+ 93.6
Israel	4.37	4.43	8.42	1.00	591.0	– 0.8	+ 10.6	+ 11.3
South Africa	5.78	6.22	11.1	7.55	12,577.9	+ 2.4	+ 21.1	+ 39.9
Turkey	1,420,500	1,451,000	2,739,150	23.09	22,560.9	– 4.1	+ 21.1	+ 19.8
Czech Republic	23.3	26.8	44.8	2.59	1,017.7	+ 0.5	+ 54.4	+ 70.5
Hungary	184	224	354	9.70	14,317.9	+ 1.5	+ 52.6	+ 72.3
Poland	3.13	3.85	6.04	6.76	25,621.3	+ 3.1	+ 23.1	+ 47.1
Russia	27.9	29.7	53.9	13.00	611.1‡	– 5.7	+ 2.9	+ 7.7
EMF (MSCI)*	1.00	1.00	1.93	na	518.5	+ 2.0	+ 17.1	+ 17.1
EMBI+†	1.00	1.00	1.93	na	322.0	– 0.7	+ 9.2	+ 9.2

*Emerging Mkts Free. †J.P. Morgan Chase's Emerging Mkts Bond Index Plus. ‡In $ terms. §Floating exchange rate.

Sources: National statistics offices, central banks and stock exchanges; Thomson Datastream; Economist Intelligence Unit; Reuters; J.P. Morgan Chase; Hong Kong Monetary Authority; Centre for Monitoring Indian Economy; FIEL; EFG-Hermes; Bank Leumi Le-Israel; Standard Bank Group; Akbank; Deutsche Bank

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